ADDENDUM

Addendum May 20, 2004

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OFFICE OF ENVIRONMENTAL HEALTH & SAFETY

This site is best viewed with Adobe Reader 6.0. If you don’t have Adobe Reader, download the free application http://www.adobe.com/products/acrobat/readstep2.html to read the manual.
STATEMENT OF SUBMITTAL

This manual has been prepared in accordance with the provisions of the State of Louisiana revised Worker's Compensation Act, Section 1291 Paragraph (B)4, and Department of Labor, Office of Worker's Compensation Administration, Rule LWC 15.

Possessing the necessary qualifications, as defined under Rule LWC 15.2 Paragraph B and C (1)(3) and (4), I do hereby certify that I am legally eligible to prepare, revise, and review this document for Tulane University.

__________________________________
James J. Balsamo, Jr.
CSP #7829  CHCM #811
Director, Office of Environmental
Health and Safety

Date: ______________________________

First Edition:  2/91
Third Edition:  9/03

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EMERGENCY RESPONSE

TULANE UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY POLICIES AND PROCEDURES MANUAL
REVISION DATE: 9/1/03

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### REFERENCED FORMS

- **FirstReportofInjury/Illness**  
  Form18F-OEHS
- **TelephoneBombThreatChecklist**  
  Form03F-OEHS
I. Emergency Response

A. Emergency Contacts

**SECURITY**

<table>
<thead>
<tr>
<th>Department</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUHSC Police</td>
<td>(504) 988-5555 Tulane University Health Sciences Center; School of Public Health &amp; Tropical Medicine; J. Bennett Johnston Building; Hebert Center; Tulane National Primate Research Center</td>
</tr>
<tr>
<td>Public Safety</td>
<td>(504) 865-5200 Tulane University (Uptown)</td>
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**TULANE MEDICAL FACILITIES**

<table>
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<tr>
<th>Department</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Occupational Medicine Clinic</td>
<td>(504) 988-3986 1415 Tulane Avenue New Orleans, LA 70112</td>
</tr>
<tr>
<td>Tulane University Hospital and Clinic</td>
<td>(504) 988-5263 1415 Tulane Avenue New Orleans, LA 70112</td>
</tr>
</tbody>
</table>

**OFFICE OF ENVIRONMENTAL HEALTH & SAFETY**

<table>
<thead>
<tr>
<th>Address</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1430 Tulane Avenue, TW-16</td>
<td>(504) 988-5486 (504) 988-1693 (Fax)</td>
</tr>
<tr>
<td>New Orleans, LA 70112</td>
<td></td>
</tr>
<tr>
<td><strong>Downtown</strong></td>
<td>(504) 988-5486 (504) 988-1693 (Fax)</td>
</tr>
<tr>
<td>Uptown</td>
<td>(504) 865-5307</td>
</tr>
<tr>
<td>Web Site</td>
<td><a href="http://tulane.edu/oehs">http://tulane.edu/oehs</a></td>
</tr>
</tbody>
</table>

B. Injury/Illness Reporting
B. Injury/Illness Reporting

All occupational injuries/illnesses must be documented on a First Report of Occupational Injury/Illness form (Form 18F-OEHS in Appendix E of this manual) which should be presented to medical staff person nel prior to treatment unless the situation is life threatening. In life threatening emergencies the form should be completed as soon as possible.

The completed form must be submitted to the Office of Risk Management (send original) and the Office of Environmental Health and Safety (send copy).

Office of Risk Management
Tulane University
300 Gibson Hall
6823 St. Charles Ave
New Orleans, LA 70118
(504) 865-5783 Phone
(504) 862-8766 Fax

Office of Environmental Health & Safety
(See previous page for address/phone number)
II. Personal Injury Emergencies

A. Emergency Response Basics

In all emergency situations, remain calm—becoming excited impairs one's ability to respond quickly and efficiently. If the emergency requires assistance, call 911 or Security\(^1\) immediately. Because of the availability of the Tulane Emergency Services (TEMS) unit at the Uptown Campus, employees at that location may want to call Security instead of 911. Off campus facilities should call 911, then Security.

Do not move the injured/ill person(s) unless there is imminent danger of further harm. Keep the person(s) as comfortable as possible until trained emergency personnel arrive. If mouth-to-mouth resuscitation is needed, non-emergency personnel who are nevertheless trained and certified in the CPR technique may attempt resuscitation but are cautioned that doing so without a CPR barrier valve may place the resuscitator at risk.

If an emergency occurs that compromises an entire area, call 911 or Security immediately, alert all personnel to evacuate, help remove injured/ill persons and any persons with disabilities who need assistance, and close all openings to the affected area to minimize further risks.

If the emergency creates a potential for contamination, persons who may have been exposed should be evacuated to a holding area until exposure has been assessed. Again, keep injured, ill, or contaminated persons as comfortable as possible until trained emergency personnel arrive.

\(^1\) PLEASE NOTE: Despite the differing titles used at various facilities, the word “Security” throughout this section (and throughout this manual) refers to services provided by authorized University law enforcement personnel, and any use of the word “Security” should be understood to mean security services at the facility where the employee is located.
Having been notified of an emergency situation by an injured/ill person or by other parties, supervisors/principal investigators should immediately relate reported injuries/illnesses and other emergencies to Security or 911 and then to OEHS for assistance when needed, and as a matter of record whether or not assistance is required.

B. Guidelines for Specific Injuries

1. Cuts/Puncture Wounds

   If you have suffered a cut or puncture: a) wash the affected area with soap and water for several minutes; b) compress the area if the wound continues to bleed; c) seek medical attention immediately; and d) inform your supervisor/principal investigator.

   If you discover a person who has suffered a cut or puncture who is unable for any reason to attend to himself/herself, call Security immediately and await the arrival of trained emergency personnel. Unfortunately, the potential hazards associated with the transfer of bodily fluids require extreme caution and limit the amount of help an untrained person may offer. Because of the availability of the TEMS unit at the Uptown Campus, employees at that campus may want to call Security instead of 911. Off Campus facilities should call 911, then Security.

   If you have been trained to handle emergencies involving the discharge of bodily fluids, you may proceed with caution to assist the person only if the proper protective equipment (e.g., gloves, etc.) is available for your personal protection.

   Please remember that materials used in administering first aid that have come into contact with bodily fluids must be handled as biohazardous waste and discarded according to University policy. This caution also applies to any surfaces that have had contact with bodily fluids.

2. Clothing on Fire

   Stop, drop and roll or, if available, drape yourself in a fire blanket to smother the flames. Obtain medical attention. Report the incident to your supervisor/principal investigator.

3. Foreign Material in Face/Eyes

   If any foreign matter enters the face and/or eye area, the face and eyes should be rinsed with water for at least 15 minutes. The eyelid should be held open while the eyeball is kept rolling allowing the flushing fluid to reach all surfaces of the eye and under the eyelid. Obtain medical attention. Report the incident to your supervisor/principal investigator.

4. Biological Spill on Body

   Remove contaminated clothing and shoes; wash exposed area with soap and running water for several minutes using a safety shower if available. Do not rub hard on the skin while washing. Obtain medical attention. Report the incident to your supervisor/principal investigator and OEHS. The contaminated clothing must not be handled without gloves or worn again until properly cleaned. The clothing should be bagged and labeled as biohazardous. OEHS will provide instructions on proper handling of the clothing and other cleaning materials.
5. **Chemical Spill on Body**

Remove contaminated clothing and shoes; rinse the exposed area with copious amounts of running water for at least 15 minutes using a safety shower if available. Do not rub hard. Obtain medical attention. Report the incident to your supervisor/principal investigator and OEHS. **Caution:** Certain water reactive chemicals should be brushed off before the skin is rinsed with water. Consult the Material Safety Data Sheet (MSDS) for specific information on the chemical involved to ensure that all precautions are being exercised. The contaminated clothing must not be handled without gloves or worn again until properly cleaned. The clothing should be bagged and labeled as a chemical hazard. OEHS will provide instructions on proper handling of the clothing and ancillary cleaning materials.

6. **Radiation Spill on Body**

Remove contaminated clothing and shoes, rinse the exposed area for several minutes with copious amounts of running water—use a safety shower if available. Do not rub hard on the skin. Obtain medical attention. Report the incident to your supervisor/principal investigator and OEHS. The contaminated clothing must not be handled without gloves or worn again until properly cleaned. The clothing should be bagged and labeled as a radiological hazard. OEHS will provide instructions on proper handling of the clothing and ancillary cleaning materials.

C. **Where to Seek Medical Attention**

1. **Serious Injury/Illness**

   In all instances of serious injury/illness that occur during working hours, call 911 for immediate medical attention. Use the closest medical facility or the hospital of the injured/ill employee’s choice. Because of the immediate availability of the Tulane Emergency Services (TEMS) unit at the Uptown Campus, employees at that location may wish to call Security instead of 911. Off-site facilities should call 911, then Security.

2. **Other Injury/Illness**

   Employees at all Tulane facilities may report immediately to the Occupational Medicine Clinic located at Tulane University Hospital and Clinic (TUHC), or to the TUHC Emergency Room if Occupational Medicine is closed. Contact Security for help (see LA of this section for emergency phone numbers and addresses).

   Employees are also at liberty to use a hospital or doctor of their choice. As with injuries or illnesses treated at Tulane facilities, the employee should present a First Report of Occupational Injury/Illness form at the time of treatment, and must forward the form to Risk Management and OEHS within 24 hours.
3. **Bloodborne Exposures**

Regardless of the facility where an employee works, if a exposure to a bloodborne pathogen occurs, the employee must report immediately to the Occupational Medicine Clinic at TUHC in New Orleans for care. The single exception is that employees of the Primate Center should report exposures to the occupational nurse practitioner at the Primate Center, or if this person is not available, employees may go directly to Tulane’s current medical provider on the North Shore.

### III. Work Area Emergencies

A. Asbestos Release

B. Fire

1. Fire Alarm Alert
2. Discovering a Fire
3. Using a Fire Extinguisher
4. If Trapped by a Fire
5. You Must Remember This

C. Hazardous Materials Spills
   1. Biological
   2. Chemical
   3. Radiation

D. Mercury

E. Gas Leak/Vapors/Odors

### III. WORK AREA EMERGENCIES

A. **Asbestos Release**

If a known asbestos release occurs or is suspected during normal work hours, immediately call OEHS. After hours, immediately call Security. Because of its hazardous properties, the handling of asbestos is strictly regulated by federal, state and local regulations. Only persons trained in asbestos removal are prepared and authorized to handle an unexpected release of asbestos in the work area. Until Security and or OEHS respond, stop any further work in the area where the suspected release has occurred and restrict access to the area. Personnel who have information as to the cause of the release should remain at the site to discuss specifics with Security and or OEHS.

- *See Section 21 Asbestos Management* of this manual.

B. **Fire**

1. **Fire Alarm Alert**

   If a fire alarm is heard, stand by for evacuation orders if the building is equipped with a public address system. If there is no public address system, or the available system fails to respond promptly with emergency instructions, immediately evacuate using the same predetermined route that your unit (a unit is a department, section, center, or program, or any number or combination thereof) during fire drills, which should always be the nearest stairwell or ground floor exit.
Never use elevators to evacuate unless so directed by fire department personnel. Once outside, stay as far away from the building as possible to ensure unimpeded access by fire department personnel and equipment. Do not re-enter the building until an “all clear” signal is issued by security personnel or fire department officials. In all building evacuations, your destination point should be an assembly point designated in the Emergency Action Plan for your unit. At the designated point, the unit’s Departmental Safety Representative will take a head count and report any missing persons to emergency personnel as soon as circumstances permit.

2. Discovering a Fire

If you discover a fire, think of the acronym “ESCAPE” to recall the following steps:

E VALUATE the situation.
S ECURE the immediate area by removing personnel.
C LOSE door(s) to the area where the fire is located.
A CTIVATE the building fire alarm.
PH ONE Security and state the exact location of the fire.
E XTINGUISH the fire if it is small and not spreading so as to block your exit.

3. Using a Fire Extinguisher

In using a fire extinguisher, think of the acronym “PASS” to recall the following steps:

P ULL the pin from the extinguisher handle.
A IM the nozzle at the base of the fire.
S QUEEZE the handles together.
S WEEP from side to side standing 10-15 feet from the fire.

4. If Trapped by a Fire

If you get trapped by a fire and exits are inaccessible due to fire or smoke, return to an accessible room that is equipped with a telephone. Before entering any room in a fire area, feel the door with the “back” of your hand; do not open the door if it is warm or hot.

Once inside an accessible room, use clothing, towels or rags (wet if possible) to seal doors, vents and other openings where smoke might enter. If you are trapped in a room with operable, double-hung windows, open the top sash of one window to vent smoke and the bottom sash to breathe fresh air. If the windows in the room slide horizontally, open one window enough to effectively vent smoke near the top while you breathe fresh air near the bottom.

Attempt to signal rescue workers by continuously turning lights off and on, and/or by hanging (or waving) clothing, or any comparable item, out of the window to draw attention.

5. You Must Remember This

Never turn your back on a fire! Never allow a fire to come between you and your way out.

Stay low! Smoke and heat will rise, so crawl on the floor to get the most oxygen rich, smoke-free air.
**Feel the door!** Before entering or exiting a room where a door must be opened, feel the door with the “back” of your hand. *If the door feels warm or hot, do not open it!* If the door does not feel warm or hot, proceed to open it with caution but do not enter if the room or hallway is filled with smoke.

- See Section 26 Fire Safety, of this manual for further reading.

C. Hazardous Material Spills

1. Biological Spills

*If the spill is on the body, follow procedures in II.B.4 above.*

There are some agents that can be safely handled outside of a biological safety cabinet. Because biological spills occurring outside of a unit can generate and disperse aerosols throughout the laboratory and adjoining areas, occupants should hold their breath and leave the area immediately to avoid the risk of inhalation exposure. The laboratory must not be reentered for decontamination/clean-up until an assessment of the area is done by trained emergency personnel or by OEHS and a clearance to reenter is given.

Upon reentry for decontamination/clean-up (biological spills must be treated with an appropriate disinfectant detergent. Only employees who are trained in handling biohazardous materials, and who are donned in properly fitted and appropriate personal protective equipment, may commence decontamination/clean-up using emergency response steps outlined in their unit’s site-specific operating procedures (in laboratories, this would be the “standard operating procedures”). If BSL-2 or BSL-3 agents are involved, OEHS must be notified immediately to assist in the decontamination process.

- See Section 29 Hazardous Materials Safety; Section 12 Hazard Communication; Section 22 Biological Safety; and Section 30 Laboratory Safety, of this manual for further reading.

2. Chemical Spills

*If the spill is on the body, follow procedures in II.B.5 above.*

OEHS has prepared emergency response procedures for incidents involving hazardous materials. Chemical spills assessed as MAJOR must be immediately reported to Security and to OEHS for handling. However, the following steps may be taken while awaiting OEHS:

a. Alert and evacuate employees. If there is a possibility that employees have been contaminated, exposed persons should be evacuated to a holding area until exposure can be assessed.

b. Avoid breathing in vapors while evacuating.

c. Turn off sources of ignition and heat.

d. Deny access to the affected area while awaiting help.
In MINOR spills, follow the same steps given above for major spills. However, with minor spills, employees trained in handling hazardous chemicals, and who are donned in properly fitted and appropriate personal protective equipment, may commence decontamination/clean-up using emergency response steps outlined in their unit’s site-specific operating procedures (in laboratories, this would be the “standard operating procedures”). Spill kits should be available for this purpose.

- See Section 29, Hazardous Materials Safety; Section 12, Hazard Communication; Section 30, Laboratory Safety; and Section 25, Fine Arts Safety, of this manual for further reading.

3. Radiation Spills

Radiation spills identified as MAJOR must be reported immediately to Security and OEHS for handling. Deny access to the area until help arrives. Because radiation can easily be spread, movement of possibly contaminated persons must be restricted until they can be monitored. If evacuation is imperative, evacuate to a holding area until exposure can be assessed.

MINOR radiation spills should be reported to OEHS as well. In minor radiation spills, employees trained in handling radiation spills who are donned in properly fitted and appropriate personal protective equipment may proceed to manage the spill using emergency response steps outlined in their unit’s site-specific operating procedures (in laboratories, this would be the “standard operating procedures”) and the Tulane University Radiation Safety Manual. As with major spills, alert and evacuate employees; have contaminated employees evacuated to a holding area where they may be decontaminated and continually monitored until no traces of radiation remain.

- See Section 33, Radiation Safety; Section 29, Hazardous Materials Safety; Section 12, Hazard Communication; and Section 30, Laboratory Safety, of this manual for further reading.

4. Mercury Spills

a. Avoid or minimize spills of elemental mercury. Avoid skin contact.

b. If possible, clean up gross spills with pipette and suction bulb and place in containers with tight fitting lids. Ventilate area well to remove mercury vapors.

c. The "No Eating, Drinking, Smoking or Applying Cosmetics" rule is especially important where mercury is handled. Mercury can be picked up on the tips of cigarettes and is easily absorbed by ingestion and inhalation. Chronic exposure and absorption of mercury may lead to metallic taste in mouth, a "lead line" (gray line) around gums, and neurologic problems (irritability, hyperflexation, coma).

d. Do not place elemental mercury waste in drains.

e. For help in spill clean up and/or disposal, contact OEHS.
5. **Gas Leak/Vapor/Odors**

   a. Report odor complaints to Facilities Services on your campus. If required, Facilities Services will contact OEHS for assistance.

   b. Provide as much information as possible about the odor to those investigating the complaint: location of incident and areas affected, type and intensity of odor, approximate time when odor first appeared, contact person for the area, phone number of contact person, etc.

   c. If conditions cause an adverse bodily reaction, evacuate to fresh air after notifying supervisor/principal investigator.

   d. Seek medical attention as needed.

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**IV. Emergency/First Aid Equipment**

A. **First Aid Kits**

B. **Eyewash Stations and Safety Showers**

C. **Fire Extinguishers**

D. **Spill Kits**

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**IV V. EMERGENCY / FIRST AID EQUIPMENT**

Many of the emergency procedures outlined in “Personal Injury Emergencies” and “Workplace Emergencies” above, are dependent on having the proper equipment on hand and ready for use should such emergencies occur. The following information on first aid kits, eyewash stations, safety showers, fire extinguishers, and spill kits explains the type, location, accessibility, and maintenance of such equipment, and should be reviewed as part of the emergency preparedness program for your area.

A. **First Aid Kits**

   If a first-aid kit is available in the area, make certain that it is properly maintained and adequately supplied, and that all personnel or occupants are made aware of its location and availability.

B. **Eyewash Stations and Safety Showers**

   1. Eyewash stations shall be accessible from all points of potential hazardous chemical use or exposure and from areas where corrosive and/or caustic materials may cause injury to the eye. Access to eyewash stations must remain unobstructed.

   2. Eyewash stations should be provided with bowl and drain, or may be of the swivel type located near a sink to facilitate periodic testing by laboratory personnel. **Caution:** Squeeze bottles and neutralizing solutions are not adequate substitutes for a hard mounted, plumbed eyewash station. They do not provide sufficient flushing time and may, in fact, cause additional harm. Eyewash stations must be activated weekly for water flow by department personnel.
3. Safety showers should be located in rooms/hallways and within 10 seconds traveling distance from areas where hazardous materials are used. Access to the safety showers must remain unobstructed and they must be tested annually by Facilities Services.

C. Fire Extinguishers

1. Portable fire extinguishers must be properly wall mounted or kept in cabinets in accessible locations so that the maximum travel distance is 75 feet for all areas except those areas using flammable or combustible liquids. For areas using such liquids, the travel distance is reduced to 50 feet depending on the size of the extinguisher. Travel distance requirements are the same whether or not the building has automatic sprinklers.

2. Installation, inspection, and maintenance of code required fire extinguishers is the responsibility of Facilities Services. However, extinguishers purchased and placed in service by labs or other departments, must be reported to Facilities Services for inspection and maintenance service.

3. Extinguishers are installed in a building based upon occupancy usage. Areas using combustible metals should be equipped with appropriate Class D extinguishers. Make certain that your area is supplied with the proper extinguisher type.

<table>
<thead>
<tr>
<th>Class A</th>
<th>For wood, paper, cloth, and trash fires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class B</td>
<td>For paint, oil, grease, and flammable and combustible liquids</td>
</tr>
<tr>
<td>Class C</td>
<td>For energized electrical fires</td>
</tr>
<tr>
<td>Class D</td>
<td>For combustible metals such as sodium metal, etc., normally found in laboratories (Class D extinguishers are metal specific).</td>
</tr>
<tr>
<td>Class K</td>
<td>For fires in food service areas</td>
</tr>
</tbody>
</table>

- See III.B.3 Using a Fire Extinguisher, above. See also Section 26 Fire Safety, of this manual.

D. Spill Kits

Spill kits enable quick response for spill cleanups. There are a variety of kits available. Make certain that you have the appropriate kit given the type of hazardous materials present in your work area and all personnel are trained in using the kit. Check the area’s site-specific operating procedures ("standard operating procedures" in labs) for a list of the chemicals present in your unit to determine the most suitable spill kit to purchase and contact OEHS for assistance, if needed.
V. HEIGHTENED SECURITY AND EMERGENCY PLANNING

In light of threatened terrorist activities, the University has extended its emergency preparations beyond standard procedures for emergencies that occur in the course of daily work and research. The University has also requested a greater awareness of the surroundings from University personnel. Heightened awareness and reporting of suspicious activities broadens the reach and grasp of Security and other law enforcement authorities.

A. Suspicious Behavior/Circumstances

1. Be aware of and report to Security or 911:

   People in buildings or areas who do not appear to be conducting legitimate business.
   People monitoring areas, buildings or entrances.
   Unauthorized people in restricted, sensitive or private areas.
   People requesting information with no apparent need for the information.
   People wearing clothing not consistent with the weather conditions at mass population events (bulky coat in warm weather for example).
   Abandoned parcels or other items in unusual locations or high traffic areas.
   Individuals attempting to access utility locations (water, electrical, telecommunications, information systems).
   Multiple persons who appear to be working in unison, committing any of the above.

2. Be alert to and report to Security or 911:

   Abandoned vehicles.
   Vehicles parked near buildings or public and common areas.
   Unexpected/unfamiliar delivery trucks.
   Unfamiliar vehicles parked for long periods
   Vehicles containing unusual/suspicious parcels or material.
   Vehicles arriving and being left behind at odd hours.
   Substances leaking or spilling from vehicles.

3. Evaluate your building/office area:

   Do not prop open building/residence hall entrance doorways/windows.
   Account for and secure keys.
Do not leave keys unattended or give them to unauthorized persons. Report lost keys to Security and the area’s supervisor/principal investigator. Account for and secure all sensitive deliveries in a timely manner. Secure all areas when not attended. Be aware of unfamiliar persons in or visitors to your office/lab, etc. Protect access codes, combinations, cards. Change codes regularly. Report compromised codes to persons in charge of the area. Do not allow persons to enter with you through the door protected by a code system. Take time out to familiarize yourself with building evacuation plans/routes. Report suspicious tampering with physical security (doors, locks, etc.) Talk with co-workers; know what is out-of-place (unclaimed items, etc.)

B. Packages/Envelopes with Unusual Appearance/Feel/Odor

If you receive a package or envelope that looks, feels, or smells odd, or where a powder or liquid is emanating from the package or envelope, do not open, examine or handle the item further. Immediately notify Security and OEHS, and then leave the immediate area or room but stay close by until emergency personnel arrive. OEHS, or other trained personnel at the request of OEHS, will respond, evaluate the situation, and take appropriate action. (See, United States Postal Service website, “suspicious mail,” for further information.)

C. Bomb Threats

1. Suspicious Packages/Envelopes

If the envelope or package is suspected of containing an explosive device, call Security and immediately evacuate the area. Security will take charge and contact OEHS and/or other appropriate individuals/agencies, if needed.

2. Written Notes, E-Mails, and Other Electronic Communications

If the item is a written note, place it on a secured surface and do not handle it further. If the threat comes by e-mail, fax, or other electronic communication, save the original text. Security will collect the written note or electronic communication and will solicit other professional assistance as needed in investigating the source of the threat.

3. Phone Calls

A checklist is provided at the end of this section for anyone who may receive a bomb threat by phone. (Form 03F-OEHS, Telephone Bomb Threats/Checklist).

Start by noting the time of the call and the exact words of the caller. If you have access to the checklist at the end of this section follow the questions and provide the descriptive information requested. The checklist will provide some structure during a stressful situation and may help identify the caller. When the caller hangs up, call Security immediately to convey the information you gathered. (If possible, while you are on the phone you may try to indicate to another employee that Security should be called.) After reporting to Security, inform your supervisor of the threat and the call to Security.
If the threat affects your area, Security may direct you to search for suspicious packages, bags, or for anything odd or not belonging. If found, DO NOT TOUCH the item(s). Notify Security, clear everyone from the office housing the suspected item, close the door, and leave the area. If the threat does not affect your area, stand-by and await further instructions from Security.

4. Mandatory Evacuation

Tulane policy on bomb threats provides that every threat must be treated as real until proven otherwise, and that all persons exposed to the potential danger have a right to know of the risk. Information about the threat will be announced over the public address system or as Security directs. If required, Security or other authorized personnel will announce orders for mandatory evacuation. If appropriate, however, the threatened area may be searched without mandatory evacuation. As a threat’s credibility increases, a decision for mandatory evacuation will be made by University authorities in conjunction with Security and other authorized emergency personnel.

If evacuation is required use the same predetermined evacuation route as that used during a fire emergency (i.e. nearest stairwell and ground floor exits) unless directed otherwise by emergency personnel. (Emergency personnel will activate fire alarms if needed.) Move as far away from the building as possible to allow free access by emergency personnel, and do not attempt to reenter the building until so instructed by Security or other authorized emergency personnel such as Fire Department or Police Department personnel. In all building evacuations, your destination point should be an assembly point designated in the Emergency Action Plan for your unit unless directed otherwise by emergency personnel. At the designated point, a head count will take place and any missing persons should be reported to emergency personnel as soon as circumstances permit.

D. Homeland Security Advisory System (Color Code)

In communicating emergency information and conveying the level of alertness required of campus personnel in general and emergency response and law enforcement personnel in particular, the University may make reference to the federal government’s Homeland Security Advisory System (HSAS) color codes which define the nature and degree of terrorist threats.

Each color indicates the level of vigilance, preparedness and readiness required for the level of threat identified. Protective measures associated with each color are steps that will be taken by the government and the private sector to reduce vulnerability.

Tulane shall also adhere to the requirements of the HSAS. If a terrorist threat or event occurs on campus or within our immediate community, University personnel and students will be immediately notified of what actions they are to take. These instructions will be in coordination with community homeland security authorities and their instructions.

You may be instructed to stay in the building where you are located at the time of the alert or evacuate to another point or location on campus. Follow instructions and do not panic. The University will be in direct contact with the local emergency personnel and will coordinate University actions in accordance with instructions from these officials.

The HSAS has established five threat conditions (with associated protective measures) required during each level of threat:
1. **GREEN - Low Condition**

   Code “green” indicates a low risk of terrorist attacks. Activities associated with a “low condition” status include:
   
   Refining and exercising preplanned protective measures.
   
   Ensuring personnel receive training on HSAS (departmental or agency-specific).
   
   Protective measures.
   
   Regularly assessing and eliminating any discovered vulnerabilities in a facility.

2. **BLUE - Guarded Condition**

   Code “blue” indicates a general risk of terrorist attacks. Activities associated with a “guarded condition” status include all measures listed under code green as well as the following:
   
   Checking communications with designated emergency response or command locations.
   
   Reviewing and updating emergency response procedures.
   
   Providing the public with necessary information.

3. **YELLOW - Elevated Condition**

   Code “yellow” indicates a significant risk of terrorist attacks. Activities associated with an “elevated condition” status include all protective measures listed under code green as well as the following:
   
   Increasing surveillance of critical locations.
   
   Coordinating emergency plans with nearby jurisdictions.
   
   Assessing further refinement of protective measures within the context of current threat information.
   
   Implementing, as appropriate, contingency and emergency response plans.

4. **ORANGE - High Condition**

   Code “orange” indicates a high risk of terrorist attacks. Activities associated with a “high condition” status include all protective measures listed under code green as well as the following:
   
   Coordinating necessary security efforts with armed forces or law enforcement agencies.
   
   Taking additional precaution at public events.
   
   Preparing to work at an alternate site or with a dispersed workforce.
   
   Restricting access to essential personnel only.

5. **RED - Severe Condition**

   Code “red” indicates a severe risk of terrorist attacks. Activities associated with a “severe condition” status include all protective measures listed under code green as well as the following:
   
   Assigning emergency response personnel and pre-positioning specially trained teams.
   
   Monitoring, redirecting or constraining transportation systems.
   
   Increasing or redirecting personnel to address critical emergency needs.
E. Emergency Planning

Emergency planning is addressed at the unit level where a Departmental Safety Representatives (DSR) ensures that personnel within his/her unit have prepared an “emergency action plan” specific to the location and needs of that unit. When the plan is finalized, the DSR ensures that there is broad awareness of the plan within the unit. A unit is a department, section, center, or program, or any number or combination thereof (the exact configuration to be determined by a senior officer, dean, and/or director) represented by a DSR (or any number of DSRs) appointed by a Unit Head. Each unit must have an emergency action plan. (See, Section 2, Environmental Health and Safety, of this manual for further information on DSRs, units, and the Compliance Management System.)

Emergency planning is also addressed at the facility level where OEHS, using input from the various unit “emergency action plans” (see E.1.g below) develops emergency plans for each facility. OEHS also has in place extensive emergency plans that include assistance from federal, state, and local agencies for “all” Tulane facilities.

1. Unit Planning

The departments, centers, programs, and/or sections that make up a unit are encouraged to prepare for emergencies by assessing their areas and preparing an inventory of equipment, furnishings, books, art work, etc., with a view toward resuming normal operations as soon as possible when the emergency is over.

a. Make certain that inventories of chemicals, biological, and radiological materials, equipment, books, and other office materials are current (include acquisition dates and costs).

b. If you have equipment or art work on site that is not University property (on loan from donors, vendors or other universities) make certain that you have a written loan agreement specifying who is providing insurance.

c. Ascertain whether you have documents that, if lost, would have a critical impact on your department’s ability to function.

d. List any equipment that would be difficult to replace because of rarity, age, or time lag from order to delivery.

e. Crucial items need to be stored so they can either be protected on-site or easily removed at the time of evacuation. Plans as to how such items can be protected on-site or prepared for removal by fire personnel in the event of an emergency should be developed in coordination with the fire department.

f. Make certain that all personnel review Site-Specific Operating Procedures (aka, Standard Operating Procedures for laboratories and hazardous materials operations) that include, among other things, plans for handling emergency situations that may arise at the work site during normal operations.
g. **Emergency Action Plans** (EAP) developed and maintained by individual units provide emergency instructions and directions for the safe evacuation of personnel from the building where the emergency is taking place, to a designated assembly area outside of the building, or to an area of safety within the building. If possible, a head count should be taken at the assembly area and any missing persons should be reported to fire, police, or Security personnel. DSRs should be the first point of contact for questions about emergency procedures and for information about the unit’s EAP.

**EAPs should include the following elements:**

1) Plans that identify fire protection systems (alarms, suppression equipment) within the unit, fire exits, and exit routes to take in evacuating the building.

2) Evacuation procedures that address routes to be taken in evacuating a building and a designated assembly point where a head count of personnel can be taken to determine whether any persons are missing.

3) Provisions for assisting students and visitors (especially visitors with disabilities) who are not familiar with the building or a unit's evacuation procedures.

4) Provisions for assisting University personnel with disabilities in the event of an evacuation.

5) Provisions for shut-down of special processes or equipment.

6) Designated volunteer personnel to help with evacuation or with equipment shut down.

h. Evacuations may result because of fire, bomb threats, terrorist activities, etc. A number of options should be built into an EAP. For example, the plan may include more than one evacuation route and more than one designated assembly area in the event the first choice is inaccessible.

i. DSRs must ensure that 1) all personnel in their units are familiar with the EAP and know where designated assembly points are located; 2) that any change(s) in the plan is immediately communicated to personnel; and 3) that new employees are apprised of the plan as soon as possible.

j. Emergency situations and information will be communicated to all personnel via fire alarm systems, PA systems, or by Security personnel.

2. **OEHSEmergencyPlanning**

In addition to the input O EHS takes from unit EAPs to prepare for an overall plan for each facility, OEHS has developed and implements response plans for any event of a major or catastrophic accident or spill involving hazardous materials/wastes. These plans are extensive and provide for assistance from federal, state, and local authorities, fire and police units, etc. Also, there is a **Spill Prevention Counter Measures and Control Plan** and an **Emergency Response Notification Plan** that provide excellent information and guidance concerning emergency actions in certain situations. These plans are available on the OEHS website at [www.som.tulane.edu/oehs/hazmat.htm](http://www.som.tulane.edu/oehs/hazmat.htm).
TELEPHONE BOMB THREAT/ CHECKLIST

Exact time/date of call: _______________________________________________________

Ring: Internal __ External __

Exact words of caller (If necessary, ask him/her to repeat the message and write as much
of the message as possible.) Use back of sheet if needed. ♦

While on the phone: keep calm; keep the caller talking; do not hang up. Signal a co-
worker to pick up an extension line to notify SECURITY, or local police.

If possible, get the caller to answer the following questions:

When and where is the bomb going to explode?

What type of bomb is it? What does it look like?

What will cause it to detonate?

Why was the bomb planted?

Try to get caller’s identity.

Ask caller where he/she is calling from. Try to get caller’s exact location and phone
number.

Listen carefully to the voice; note whether it’s a man or woman; pay attention to pitch, tone,
accent. CIRCLE any of the following that are applicable:

Calm Slow Nasal Angry Broken Stutter Disguised Lisp Sincere Giggley Deep
Crying Squeaky Excited Stressed Loud Slurred Normal Rapid

Type of accent, if any:

If the voice is familiar, who did it sound like?

Background noises heard (e.g., cars, trains, factories) or any other pertinent information:

Name of person receiving call:

Phone no. call received at:

Time/Date SECURITY and/or immediate supervisor notified:

03F-ŒHS / Tulane (Rev. 3/03) Emergency Response
FORMALDEHYDE SURVEY

<table>
<thead>
<tr>
<th>NAME of person conducting survey:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department:</td>
<td>Campus/Bldg:</td>
</tr>
<tr>
<td>Phone No:</td>
<td>Room No:</td>
</tr>
<tr>
<td>e-Mail:</td>
<td>Mail Code:</td>
</tr>
</tbody>
</table>

IS FORMALDEHYDE, OR ANY FORM OF FORMALDEHYDE, USED IN YOUR AREA?

YES ( ) Please complete the following questionnaire, sign, and return it to OEHS.

NO ( ) Please sign here and return form to OEHS:

Signature: __________________________ Date: __________________

QUESTIONNAIRE (To be completed only if you answered "yes" to the above question.)

1. What activities do you perform that utilize formaldehyde?

2. Which form/state of formaldehyde is used? Solid ( ) Liquid ( ) Gas ( )

3. Please indicate type(s) of formaldehyde used: 10% Formalin ( ) 37% Concentrated Formaldehyde ( ) Paraformaldehyde ( ) Other (Specify):

4. Amount of formaldehyde used can best be described in:
   Milliliters (ml) ( ) Liters (l) ( ) Grams (g) ( )

5. Are formaldehyde activities performed with the use of ventilation control? If NO, go to question 6.
   If YES, please indicate the ventilation control used: Chemical Fume Hood ( ) Counter top unit connected to ventilation systems ( ) Counter top unit with charcoal filter ( ) Other ventilation (Specify):

6. The length of time necessary to perform the activity is ( ) hours.

7. What is the frequency of formaldehyde used? ( ) x daily ( ) x weekly ( ) x monthly ( ) x yearly

8. For monitoring purposes, please specifically indicate which day(s) of the week formaldehyde usage is heaviest: Monday ( ) Tuesday ( ) Wednesday ( ) Thursday ( ) Friday ( )

CONTINUED ON REVERSE SIDE ♦
9. Has the supervisor completed a personal protective equipment (PPE) assessment for each work category that has a potential exposure to formaldehyde? Yes ( ) No ( )

10. What training have you received with respect to procedures used when working with formaldehyde, health hazards related to formaldehyde, or personal protective equipment to use when working with formaldehyde?

Has training been documented? Yes ( ) No ( ) (NOTE: Training is required annually.)

Has training documentation been submitted to OEHS? Yes ( ) No ( )

Please indicate which pieces of PPE are used when working with formaldehyde:

( ) Gloves (Type: ______________________ ) ( ) Respirator (Type: ______________________ )

( ) Goggles ( ) Glasses with side shields ( ) Other (Type: ______________________ )

11. Have you/your work area been monitored for airborne levels of formaldehyde? Yes ( ) No ( )

If YES: When? (Date) __________ Were you informed of formaldehyde levels?

Yes ( ) No ( ) What were the formaldehyde levels? ______________________

12. State the location of the nearest eyewash and safety shower.

13. Have you received a medical examination due to a (possible) formaldehyde exposure? Yes ( ) No ( )

14. Have you experienced spills, leaks, or emergencies with formaldehyde? Yes ( ) No ( )

If YES, describe the circumstances and frequency of occurrence.

15. Are all containers of formaldehyde properly labeled? Yes ( ) No ( )

Are Material Safety Data Sheets (MSDSs) readily available? Yes ( ) No ( )

Have you read and familiarized yourself with the MSDSs? Yes ( ) No ( )

16. Have you experienced adverse effects while performing your work? Yes ( ) No ( )

If YES, have you informed your supervisor? Yes ( ) No ( )

Please describe the adverse effects experienced:

Signature __________________________ Date Survey Completed __________________________
SECTION 2
Environmental Health & Safety

I. Environmental Health and Safety (p. 2)
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   B. Regulatory Committees on Biological Safety and Radiation Safety
   C. Sources Used in Developing Health and Safety Policies/Procedures

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    B. How the System Works
    C. Responsibilities
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       2. EH&S Operations Committee
       3. EH&S Policy Committee
       4. Senior Officers
       5. Deans
       6. Unit Heads
       7. Departmental Safety Representatives
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    H. Personal Protective Equipment
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FORMS REFERENCED

Employee Safety Training Acknowledgment
Chemicals Inventory Report (various)
Personal Protective Equipment Assessment
Hazard Assessment

04F-OEHS Hazardous
06F-OEHS Inspection
12F-OEHS-17F-OEHS
11F-OEHS Respiratory
19F-OEHS

CHARTS

Compliance Management System

Page 6
I. Environmen tal Health & Safety

A. Policy

B. Regulatory Commissions

C. Safety and Compliance

MISSION

The mission of the Tulane University Office of Environmental Health & Safety (OEHS) is to support the Healthcare, Teaching, and Research activities of The University and to ensure, as practicable as possible, a safe and healthful environment for students, employees, patients, and visitors of the University and to assure that University activities do not adversely affect the health and safety of the communities which surround the campuses. OEHS is an advisory and service oriented Department that has both a preventive and a responsive role in University Health and Safety.

I. ENVIRONMENTAL HEALTH & SAFETY

Providing and promoting a safe and healthful work environment and safe work practices for Tulane employees and students at each of the University's facilities is the primary objective of the policies and procedures presented throughout this manual, most of which are based on federal, state, and local safety standards, regulations, and guidelines.

Reaching this objective requires that employees are provided: 1) information regarding basic safety, potentially hazardous materials and equipment in their work areas, and protective equipment they may need to eliminate or reduce exposure to such hazards; 2) training that addresses procedures specifically designed for the job being performed, the materials and equipment being used, the area in which the job is being done, the protective equipment required, and the contingencies developed for emergency situations; and 3) a means of ensuring compliance with the requirements of 1) and 2) above. Whenever non-compliance occurs, safety is compromised; injuries, illnesses and/or death may result; and, in many cases, non-compliance may lead to heavy penalties imposed by governmental agencies.

To ensure compliance with health and safety policies and procedures, Tulane administrators have approved the Environmental Health & Safety-Compliance Management System, which was developed by Tulane's administration and its Office of Environmental Health and Safety (OEHS), for the purpose of engaging "levels" of management to support OEHS efforts in bringing about compliance at all facilities. OEHS is the office charged with stewardship, compliance assessment, and dissemination of environmental and occupational health and safety policies and practices campus-wide. (The system is more fully outlined in further in this section.)

1 The word "University" capitalized is used interchangeably with "Tulane" or "Tulane University"
throughout this manual.
A. Policy

The policies and procedures presented in this manual are designed to ensure that 1) employees are trained in the procedures, safeguards, and use of equipment needed in performing their jobs; 2) that management bears the responsibility for training and training documentation; 3) that employees have access to information regarding the hazardous nature of any operations in which they are involved, of any hazardous materials they may handle or to which they may be exposed, and have information on the proper storage, handling and disposal of such materials; 4) that on-going efforts are being made to reduce injuries/illnesses; and 5) that employees who do become injured or ill in the workplace receive prompt medical attention.

These requirements are met through programs involving fire safety, hazardous waste management, biological safety, occupational health and safety, prevention of water and air pollution, radiation safety, accident prevention, electrical safety, emergency operations preparedness, insect and rodent control, food service sanitation and hygiene, and employee health and safety training.

Program implementation shall be through a compliance management system of senior officers, deans, unit heads, and departmental safety representatives working with OEH and the University’s environmental health & safety committees (operations and policy); published safety policies, procedures, and rules; safety meetings; newsletters; safety alert communications; inspections/audits; development of emergency preparedness plans; emergency operations drills; emergency response to fire, chemical or biological spills, and personal injuries; response to employee complaints; employee monitoring for toxic or hazardous materials exposures; hazardous waste removal activities; setting worker protection criteria; reviewing new construction or renovation plans for safety and health code compliance; and employee training.

B. Regulatory Committees

In addition to the Environmental Health & Safety Compliance Management System outlined in II. below, the following committees and review processes aid in compliance management by monitoring the use of certain chemicals, compressed gases, carcinogens, radioactive materials, and biological agents:

1. Laboratories planning to perform gene therapy, recombinant DNA experiments, or research involving select biological agents and toxins are subject to the regulations and guidelines of the University’s Institutional Biosafety Committee (IBC).

2. Laboratories and facilities using radioactive materials and radiation-producing equipment are referred to and subject to the regulations and recommendations of the University’s Radiation Safety Committee (RSC).

3. Prior to the use of explosives, “select carcinogens,” reproductive toxins, or substances having a high degree of acute toxicity, protocols should be submitted to OEHS for a review of safety procedures and concerns.

4. Grant proposals that involve the use of any of the aforementioned materials must be submitted to and reviewed by OEHS before grants may be funded (see III.C below).
5. The Tulane’s **OSHA Disease Prevention Committee** shall establish and review policies and procedures relating to bloodborne pathogens and biological agents/toxins that may cause diseases affecting staff, faculty, and visitors to Tulane facilities.

C. **Sources Used in Developing Health and Safety Policies/Procedures**

The policies and procedures set forth in this manual are based on 1) federal, state and local standards and regulations; 2) national consensus standards; 3) voluntary accreditation agencies; and 4) policies set forth by University administrators and committees. A list of contributing sources includes, but is not limited to:

Asbestos Hazardous Emergency Response Act (AHERA)
American Conference of Governmental Industrial Hygienists (ACGIH)
American National Standards Institute (ANSI)
American Society of Heating, Refrigeration, & Air-Conditioning Engineers (ASHRAE)
American Society of Mechanical Engineers (ASME)
American Society of Safety Engineers (ASSE)
American Welding Society (AWS)
Centers for Disease Control (CDC)
City of New Orleans & other local government agencies
Compressed Gas Association (CGA)
Department of Environmental Quality (DEQ)
Department of Health and Human Services (DHHS)
Illumination Engineering Society (IES)
Joint Commission for Accreditation of Healthcare Organizations (JCAHO)
National Fire Protection Association (NFPA)
National Institute of Health (NIH)
National Cancer Institute (NCI)
New Orleans Sewerage and Water Board (S&WB)
Occupational Safety and Health Administration (OSHA)
State of Louisiana Fire Marshal's Office
State of Louisiana Departments of Agriculture, Transportation and Development
State of Louisiana Department of Environmental Quality (LADEQ)
Sanitary Code of the State of Louisiana (SCSL)
Tulane University Administration
Tulane University **RadiationSafetyManual**
Tulane University Operations and Policy Committees
U.S. Federal Aviation Administration (FAA)
U.S. Departments of Transportation, Energy, Health & Human Resources
U.S. Environmental Protection Agency (EPA)
U.S. Department of Agriculture (USDA)

The **William-Steiger Occupational Safety and Health Act of 1970** requires every employer covered under the Act, to furnish their employees a place of employment free from recognized hazards that may cause death or serious physical harm. The Act also requires the employer to comply with the occupational safety and health standards promulgated under this Act, and demands that employees comply with the standards, rules, regulations, and orders that are applicable to their own actions and conduct.

**Louisiana Worker’s Compensation Law Part IV Subpart A Section 1291(b)(4), Louisiana Statutes, as amended**, requires any self-insured Louisiana employer of more than fifteen employees to provide (to be provided by carrier if privately insured) plans for implementation of working and operational safety plan. The plan shall be made available for inspection by the director of that office upon request but shall be privileged and confidential pursuant to R.S. 23:1293.
II. Environmental Health & Safety Compliance Management System

A. Components

B. How the System Works

Responsibilities


II. ENVIRONMENTAL HEALTH & SAFETY COMPLIANCE MANAGEMENT SYSTEM

The Environmental Health & Safety Compliance Management System (Compliance Management System or CMS) was designed to involve several levels of management in disseminating health and safety information and ensuring compliance with health and safety policies and procedures.

The CMS opens an information and compliance pathway which ensures that each level of management knows the compliance status of a unit and may separately and/or collectively affect a non-complying unit. For purposes of the CMS, a “unit” is defined as any configuration of a department, section, center, and/or program (or any number thereof) represented by a DSR (or any number of DSRs) who is appointed by a Unit Head (see Appendix C of this manual for unit listing). Each unit must have an Emergency Action Plan in place (see, Section 1, Emergency Response, and see V.E.1g, Emergency Action Plan, of this manual).

A. Components

The Compliance Management System is made up of the Office of Environmental Health & Safety, the University’s Environmental Health & Safety Policy Committee (Policy Committee), the University’s Environmental Health & Safety Operations Committee (Operations Committee), the Unit Heads who are the primary unit administrators, and the Departmental Safety Representatives (DSRs) who are the liaisons for all components within their units. The CMS also includes Senior Officers who report to the Policy Committee, and Deans, who like the Unit Heads, report to the Operations Committee as the chart below illustrates.

With its layers of managerial involvement, the CMS provides greater leverage in ensuring unit compliance. The system also provides an open exchange for information, suggestions, and complaints. All levels of the CMS have access to OEHS, and although OEHS may approach any level for assistance with non-compliance, it will start with lower levels of management and, if necessary, move up to higher levels until compliance is achieved.
COMPLIANCE MANAGEMENT SYSTEM

OFFICE OF ENVIRONMENTAL HEALTH & SAFETY (OEHS)

University department charged with stewardship, compliance assessment, and dissemination of environmental and occupational health and safety policies and practices campus-wide. The OEHS Director acts in these matters on behalf of the University’s administration and reports to the Senior Vice President of Operations/Chief Financial Officer.

ENVIRONMENTAL HEALTH & SAFETY OPERATIONS COMMITTEE

Members are appointed by the University President. This is a multi-disciplinary committee made up of administrative heads, faculty, and staff. Committee meets quarterly.

Deans:
Deans of: LAS Faculty, Neville College, Tulane College, Engineering, Law, University College, Graduate School, Business School, Architecture School, School of Social Work, School of Medicine, etc.

UNIT HEADS:
THE UNIT HEADS ARE THE PRIMARY ADMINISTRATORS OF UNITS.

Environmental H&S / Page 7 / SECTION 2

B. How the System Works

OEHS determines a unit's compliance status by 1) conducting audits of the unit, and 2) reviewing mandatory documentation such as inspection reports, training acknowledgments, chemical inventories, etc., that have been collected on a regular basis by DSRs and submitted to OEHS. If a unit is in compliance, OEHS shall report the unit’s positive compliance status to the Operations and Policy Committees. Compliant units and DSRs will be acknowledged yearly. Units that achieve compliance for three consecutive years will receive special recognition.

If the unit is “not” in compliance, OEHS shall first consult with the DSR, then, if necessary, the Unit Head. If after approaching the Unit Head compliance is still not achieved, OEHS shall turn to the Operations Committee for assistance. The Operations Committee shall notify the Unit Head, Dean, and/or Senior Officer in charge of the non-compliant unit and ask that their influence be brought to bear in resolving the unit’s non-compliance. If the issue is still not resolved, OEHS and the Operations Committee shall prevail upon the Policy Committee.
C. Responsibilities

The responsibility for compliance with occupational and environmental health and safety policies and practices is shared by all levels of the Compliance Management System as well as by all supervisors/principal investigators, faculty, staff, and students.

1. Office of Environmental Health & Safety

OEHS responsibilities include:

a. Coordinating all occupational health and safety activities within the University and assisting deans, Unit Heads, DS Rs and employees in the establishment and implementation of occupational and environmental health and safety policies and practices.

b. Maintaining records such as: 1) First Report of Occupational Injury/Illness forms for at least one year from the end of the year in which the reports are generated; 2) all OSHA logs for a period of five years; 3) the results of all environmental exposure monitoring, permanently; 4) a catalog of Material Safety Data Sheets; 5) a “master inventory” of hazardous chemicals, radioactive materials, and selected biological agents and toxins used at the University; 6) Asbestos Management Plans for all AHERA covered facilities; 7) emergency plans for each facility in the event of a catastrophic emergency; 8) training documentation for employees; 9) medical surveillance records; 10) standard operating procedures for laboratories, 11) personal protective equipment and respiratory assessments; 12) vaccine documentation for hepatitis B virus (HBV), 13) waste manifests, etc.

c. Distributing notices (for posting) of compliance with Louisiana Worker’s Compensation laws governing occupational injuries or diseases.

d. Inspecting support facilities, teaching facilities, laboratories, research facilities and storage areas through the use of inspections/audits and monitoring.

e. Providing all training and materials necessary for DSRs to carry out their responsibilities.

f. Reviewing DSR submittals, and if requirements are met, reporting compliance status to Operations Committee and Policy Committee. If compliance is not achieved, OEHS is responsible for notifying the Unit Head, the Operations Committee, or ultimately the Policy Committee if necessary.

g. Reviewing all major occupational and environmental health and safety objectives set forth the previous year to determine whether goals have been met, and transmitting the results of such review to the Operations Committee.

h. Submitting projected annual goals to the Operations Committee.

i. Seeking additional authority, compliance suggestions, and/or resources from and through the Operations Committee.


k. The responsibilities of the Director of OEHS include, but are not limited to:
1) Developing comprehensive occupational and environmental health and safety systems, practices, policies and procedures that minimize hazards to employees, students, and visitors to University campuses.

2) Identifying hazardous conditions or practices, evaluating and/or making recommendations for correcting and avoiding conditions or practices that might be harmful to individuals, equipment, buildings or to the environment.

3) Acting as University liaison with representatives of outside agencies on all environmental health and safety matters. The exception is that the OEHS director does not submit plans of construction and renovation to appropriate review agencies, a responsibility that belongs to University architects and engineers.

2. Environmental Health & Safety Policy Committee

Members of the University's Environmental Health & Safety Policy Committee (aka, University Policy Committee or Policy Committee):

a. Review, comment, decide on approval of policies submitted by the Operations Committee.

b. Assist other entities within the compliance management system in obtaining full compliance.

3. Environmental Health & Safety Operations Committee

The University's Environmental Health & Safety Operations Committee (aka, University Operations Committee or Operations Committee) has advisory responsibilities covering areas of occupational and environmental health and safety, and accident prevention in all operations of the University with the exception of those responsibilities explicitly assigned to the Institutional Biosafety Committee, the Tulane OSHA Disease Prevention Committee, and the Radiation Safety Committee. The Operations Committee maintains an effective liaison and open exchange of information with these committees as well as with all University operating units. It is empowered to review, evaluate and make recommendations for policies, procedures and guidelines and/or revisions to existing policies and procedures. Additionally, Committee members:

a. Assist in developing occupational and environmental health and safety education/training programs designed to create and maintain an interest in health and safety issues.

b. Assist OEHS, Unit Heads, and DSRs in the implementation of occupational and environmental health and safety policies and practices; review the University’s compliance with federal, state, and local regulations.

c. Review reports of serious accidents, incidents, exposures, or fires for the purpose of detecting hazard patterns that can be corrected.

d. Recommend 1) health and safety policies or changes to existing policies; 2) corrections to eliminate hazardous conditions and/or unsafe practices; 3) physical or structural alterations to eliminate or control hazards.

e. Review policies and procedures submitted by OEHS.
f. Assist in prioritizing projects and/or securing funds to correct hazardous conditions.

4. **Senior Officers**

   a. Charge Deans and Unit Heads with the responsibility of compliance.
   
b. Ensure that Unit Heads appoint qualified DSRs.
   
c. Assist other entities comprising the safety management system in obtaining full compliance.
   
d. Assist in the implementation of health and safety policies and practices.

5. **Deans**

   a. Advise supervisors/principal investigators of their responsibility to ensure that employees in their charge perform job assignments in accordance with safety and health guidelines specific to each assignment.
   
b. Notify all employees and students that they are expected to adhere to all safety and health rules, regulations and guidelines within the scope of their job functions or classroom activities.
   
c. Through their supervisors/principal investigators, or DSRs, perform formal inspections of the physical facilities under their jurisdiction on a quarterly basis.
   
d. Support and lend authority to efforts by Unit Heads and DSRs to ensure compliance within units under their charge.

6. **Unit Heads**

   a. Appoint DSRs and determine the duration of his/her term and the authority he/she shall exercise in accordance with the minimum requirements listed in the DSR Manual.
   
b. May form any type of DSR/safety organization within their unit that will help meet occupational and environmental health and safety program requirements.

7. **Departmental Safety Representatives**

   The DSR’s responsibilities depend upon the type of unit under his/her supervision. Units may comprise facilities, laboratories, offices, or any combination thereof:

   a. **DSRs Representing Facilities**

      1) **Quarterly**: a) attend quarterly meetings with OEHS (one of which shall be the annual Non-Laboratory OEHS Safety Training session); 2) hold quarterly meetings with unit personnel on safety topics, and forward attendance records to OEHS (may do this by e-mail or electronically); 3) collect and submit quarterly inspection forms (prepared by supervisors/principal investigators) for unit to OEHS.

      2) Report to OEHS a) any unsafe conditions or practices observed by unit members; b) spills, ergonomic problems, or asbestos concerns; c) coordinate the purchase of
equipment requiring OEHS approval, etc.; d) collect and submit departmental response to OEHS inspections.

3) Collect and submit to OEHS unit’s chemical inventory forms, PPE assessment forms, and respiratory assessment forms.

4) Ensure that MSDSs are available in the work area.

5) Coordinate facility closeout information with OEHS, Facilities Services, and the unit member closing/renovating the facility.

b. **DSRsRepresentingLaboratories**

1) **Quarterly**: a) attend quarterly meetings with OEHS (one of which shall be the annual Laboratory OEHS Safety Training session); b) hold quarterly meetings with unit personnel on safety topics, and forward attendance records to OEHS (may be able to do this by e-mail or electronically); c) collect and submit quarterly inspection forms (prepared by supervisors/principal investigators) for unit to OEHS.

2) Report to OEHS a) any unsafe conditions or practices observed by unit members; b) spills, ergonomic problems, or asbestos concerns; c) coordinate the purchase of equipment requiring OEHS approval; d) coordinate OEHS/unit grant sign-offs, etc.; e) collect and submit unit response to OEHS inspections.

3) Collect and submit to OEHS safety packets which include SOPs, chemical inventory forms, PPE assessment forms, respiratory assessment forms, door sign changes, laboratory training records.

4) Ensure that MSDSs are available in the work area.

5) Coordinate laboratory, or studio closeout information with OEHS, Facilities Services, and the principal investigator closing/renovating the lab, or faculty member in charge of the studio.

c. **DSRsRepresentingOffices**

1) **Quarterly**: a) attend quarterly meetings with OEHS (one of which shall be the annual Non-Laboratory OEHS Safety Training session); b) hold quarterly meetings with unit personnel on safety topics, and forward attendance records to OEHS; c) collect and submit quarterly inspection forms (prepared by supervisors/principal investigators) for unit to OEHS.

2) Report to OEHS a) any unsafe conditions or practices observed by unit members; b) spills, ergonomic problems, or asbestos concerns; c) coordinate the purchase of equipment requiring OEHS approval; d) collect and submit to OEHS unit response to OEHS inspections.
8. Supervisors/Principal Investigators

   a. Supervisors/principal investigators are primarily responsible for providing and documenting employee training, unit self-inspections, safety meetings, and other compliance paperwork including: annual chemical inventory, SOPs for labs, PPE and respiratory assessments, training documentation, quarterly inspections, annual OEHS inspection response, etc. Supervisors/principal investigators are ultimately responsible for the accuracy of information provided in any compliance paperwork, and for ensuring that the appropriate documents are submitted in a timely manner to their DSRs who then submit the documentation to OEHS.

   1) Safety Meetings

      Supervisors/principal investigators shall hold safety meetings with their employees on a quarterly basis. Upon request, OEHS shall provide needed assistance and resources for these meetings. Dates, attendees’ names, and topics discussed should be prepared for each meeting and filed for future reference. Note: A staff meeting may qualify as a safety meeting as long as appropriate safety issues are discussed.

   2) Training Supervisors/principal investigators shall make certain that employees are trained relative to the hazards associated with their jobs, the methods to protect themselves from these hazards, and the proper performance of a job before being left alone to perform it (unless the employee has previously performed that job). Supervisors/principal investigators must document employee safety training and forward same to their DSRs who shall submit the documentation to OEHS. A copy should be kept within the unit. OEHS provides supervisors/principal investigators with the necessary safety training to conduct these sessions.

   3) Training Documentation

      For supervisors/principal investigators who hold safety meetings/training sessions, an Employee Safety Training Acknowledgment (Form 04F-OEHS) has been provided in Appendix E of this manual. The method of transmitting safety rules to employees is left to the discretion of the trainer. As with safety meetings, training documentation should be forwarded to the DSR who shall then submit the documentation to OEHS. A copy should be retained by the unit.

   4) Unit Self Inspection

      Supervisors/principal investigators shall conduct inspections of their own units quarterly. Self-inspections shall be documented and forwarded to the DSR who shall then submit the documentation to OEHS. A copy should be retained by the unit.

   b. Supervisors/principal investigators and other supervisory personnel must review all substances, agents, processes, and possible reactions for health, safety, or fire hazards before an experiment is assigned or attempted. Any potential risks to public health or the environment must be assessed as well. These general recommendations may serve as a basis for further detailed instructions prepared for each laboratory or other University facility by those directly responsible.
c. Supervisors/principal investigators and other supervisory personnel must not permit students or staff to work with any chemicals or hazardous materials or in an area with hazardous activities without protective equipment and proper training in the hazards of the procedure(s), proper handling techniques and emergency procedures. It is the responsibility of the person having immediate control of the area or procedure(s) to provide the necessary training and personal protective equipment.

9. Faculty, Staff, Students

Faculty, staff, and students at each facility are to comply with OEH&S occupational and environmental health and safety policies set forth in this manual, and are to promote and exercise safe work practices at all times.

III. Compliance
A. General Compliance

Although the University accepts responsibility for leadership in implementing safety and health programs and conditions, in order to accomplish the objective of the University's environmental health and safety policies, all faculty, staff, students, and outside contractors are expected to become acquainted with and adhere to the policies and procedures set forth in this manual. Additionally, all staff, faculty, students, outside contractors, visitors, visiting faculty and visiting students shall comply with all rules, regulations and orders issued pursuant to federal, state, and local regulatory acts and University policies.

B. Regulatory Compliance

Many of the policies and procedures outlined in this manual are based on standards and regulations promulgated by governmental agencies such as the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA), that assess considerable penalties on institutions found to be non-compliant. Inspectors representing these agencies most often appear unannounced and the targeted unit or facility must be prepared to answer questions and provide documentation regarding hazardous materials handling (use, storage, and disposal), hazardous materials inventories, employee training, and other safety compliance issues. If fines and penalties are assessed by a regulatory agency such as the EPA, OSHA, or the Louisiana Department of Environmental Quality (LADEQ), the unit(s) receiving violation notices shall be responsible for the fines and penalties incurred.
C. Compliance Requirements for Certification of Grant Proposals

Grant proposals that require certification of compliance with occupational and environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS and/or his/her designee will not certify a grant if the applicant in not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Medical Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biological Safety.

IV. Occupational and Environmental Health & Safety Policies in Brief

A. Safety Training

Employees shall be provided with training in the proper safeguards, procedures, and equipment needed to perform their tasks safely. Supervisors/principal investigators shall be responsible both for employee training and for documentation thereof.

In addition to training and information provided by supervisors/principal investigators for specific jobs, OEHS shall provide, at the time of new employee orientation, preliminary safety information and sources for specific training. OEHS shall also periodically hold general training seminars and information booths covering such items as fire safety, laboratory safety, and personal protective equipment. On-line training programs are also available at www.som.tulane.edu/oehs.

- See SECTION 3, EMPLOYEE SAFETY TRAINING, of this manual for “general” employee training information. Training for “specific jobs” or for work in “specific areas” is addressed throughout this manual where areas of specialization are fully covered, e.g., asbestos, hazardous waste, formaldehyde, radiation.

B. Hazard Communication

1. Governmental agencies require the implementation of a comprehensive hazardous materials management plan (Hazard Communication Plan) that shall cover, among other things, hazard
determination, handling and labeling hazardous materials, material safety data sheets, employee information and training, and hazardous materials inventories.

2. All employees must have access to information concerning the hazardous materials they may handle or to which they may be exposed. Material Safety Data Sheets (MSDSs) for all hazardous materials used at the University are kept by OEHS and are also available on the OEHS website at www.som.tulane.edu/oehs. MSDSs must be available to employees in their work area.

3. OEHS shall maintain a master inventory of hazardous materials in use at Tulane based upon annual inventories submitted by the supervisors/principal investigators.

4. Any department handling the purchase of hazardous materials must have available a list of all items requiring OEHS approval prior to purchase.
   - See SECTION 12, HAZARDCOMMUNICATION, of this manual.

C. Hazardous Materials Management

University policy requires a maximum practical separation of large concentrations of people from areas in which hazardous materials are used or stored. Policy also requires that at such areas be secured when not in use and that access be limited to authorized personnel.

Facilities where hazardous materials are stored must be secured, clearly identified, labeled and routinely monitored. Purchase, storage, disposal, and transportation of hazardous materials and hazardous waste must follow established guidelines and involve OEHS handling and/or approval. OEHS has the responsibility and authority to inspect and monitor all such facilities and storage areas.

Each laboratory, research facility, support facility (including dormitories), and hazardous materials storage area, must develop site-specific operating procedures that address the specific projects or activities occurring in the area, the hazardous materials being used, and a list of contact personnel and emergency response procedures in the event of a emergency within the unit.

All procedures shall be prominently posted (or easily available) in the work area. In laboratories, the site-specific procedures are referred to as “standard operating procedures.” All such procedures must be updated at least annually. They must also be approved and periodically reviewed by OEHS.

For any experiment, research proposal, or sponsored project that requires use of high risk substances (e.g., select agents, toxins, and carcinogens, reproductive toxins, or substances having a high degree of toxicity), a protocol sheet describing the project and the operating procedures that shall be followed must be submitted to OEHS for review and approval.

- See SECTION 12, HAZARDCOMMUNICATION; SECTION 29, HAZARDOUS MATERIALSSAFETY; and SECTION26, FIRESAFETY, of this manual.
D. **Medical Treatment and Injury/Illness Reporting**

When required by law or accrediting agencies, physical examinations and regular check-ups shall be provided at University expense for those employees working with materials or in situations that are known or strongly suspected of presenting a significant health hazard. OEHS shall (via policies, training, and/or audits) inform the necessary personnel of the need for examination and shall maintain a permanent record of same in accordance with regulatory requirements.

In the event of an injury or illness on the job, the employee has a right to medical treatment. All injuries/illnesses must be reported on a First Report of Injury/Illness form (**Form 18F-OEHS**) to Risk Management (original) and OEHS (copy) within 24 hours.

- See **SECTION 4, INJURY/ILLNESS REPORTING**, of this manual.

E. **Medical Surveillance**

A medical surveillance program for employees whose work involves hazardous materials or hazardous operations shall be carried out as required by various federal and state regulatory agencies.

1. If monitoring is done, area and personal monitoring results shall be maintained by OEHS for the minimum time required, and are available to the employee or the employee’s duly authorized representative.

2. If monitoring shows exposure above the permissible exposure limits (PELS), or if a person develops signs or symptoms, or in the event of an emergency such as a spill or leak, the person is then entitled to medical surveillance. OEHS shall retain a copy of the physician’s written opinion. Results of the medical examination and tests conducted by the physician, including the physician’s written opinion, shall be kept as part of the employee’s medical record at TUHC and shall be kept for the duration of employment plus 30 years.

3. OEHS, through the supervisor/principal investigator or Unit Head, shall provide a copy of the physician’s written opinion to the affected employee and/or his/her authorized representative, within 15 days of its receipt.

4. If an employee handles or comes in contact with research animals, he/she must participate in the Animal Handling Surveillance Program. To participate in this program, staff, students, and visitors must complete a **Risk Assessment and History** Form.

F. **Contractor Safety**

Contractors must be held to the same health and safety standards as Tulane employees, and must be made aware of any potential hazards associated with the contract work. While Facilities Services is the only department authorized to contract outside contractors or vendors, OEHS shall review and have the opportunity to comment within the scope of current federal, state, and local regulations on all plans for construction, renovation, or demolition of buildings at the University to ensure due consideration to health and safety issues. Projects involving hazardous operations and hazardous materials use or storage require OEHS approval.

- See **SECTION 5, CONTRACTOR SAFETY**, of this manual.
G. Inspection and Compliance

Health and safety inspections (audits) of facilities and the operations conducted therein are mandatory and may be conducted by any of the following: OEHS, the unit supervisor/principal investigator, DSRs, or members of the Operations Committee or the Policy Committee. However, internal inspections (as opposed to inspections by parties outside the University such as governmental or insurance agencies) shall be primarily conducted by the supervisor/principal investigator or DSR representing the unit. All inspections shall be documented in inspection reports that must be forwarded to OEHS. Hazards found during an inspection must be corrected within a given time period. If corrections are not made within the given time, the unit shall be notified by the DSR or OEHS and advised of the need to comply. If neither OEHS nor the DSR can obtain compliance from the unit, appeals may be made by OEHS to higher levels of the Compliance Management System until compliance is achieved.

- See SECTION 13, INSPECTIONS AND COMPLIANCE, of this manual.

H. Personal Protective Equipment

Federal laws require assessment of work areas to determine whether the hazards present necessitate use of personal protective equipment (PPE). If assessment determines a need for PPE, federal law requires that employees be provided the necessary equipment, be properly fitted for the PPE, and trained in its use and maintenance. To assist units in meeting these federal standards, OEHS has developed the Personal Protective Equipment-Hazard Assessment Certification Program (PPE-HACP). Unit Heads and supervisors/principal investigators are responsible for implementing the PPE-HACP and for the cost of equipment. Training and recordkeeping must be provided by the supervisor/principal investigator with OEHS assistance, if needed.

- See SECTION 14, PERSONAL PROTECTIVE EQUIPMENT, of this manual.

I. Respiratory Protection

Federal law requires special provisions for respiratory protection in an effort to minimize occupational illnesses that may be attributed to the inhalation hazards. OEHS has developed a Respiratory Protection Program (RPP) that addresses federal standards. The RPP includes identification of the hazards to which employees may be exposed, determination of the proper respiratory protection, training of personnel in its usage and maintenance, routine surveillance of the work area, medical surveillance of employees using respirators, and periodic inspections.

- See SECTION 15, RESPIRATORY PROTECTION, of this manual.

J. Visiting Children

1. Children UNDER 18 years of age:

   a. shall not be allowed into areas posted with radiation warning signs, or into any animal facility, except with specific written permission of the laboratory or animal facility director;

   b. shall never be allowed into the following areas: laboratories posted at Biosafety Level 3 or Biosafety Level 4, laboratories in which infectious agents are being actively manipulated; laboratories in which chemical carcinogens or other acutely toxic chemicals are actively handled; areas of high radiation or airborne radioactivity (as defined in 10 CFR 20.104).
2. **Children UNDER 12 years of age:**
   
   a. shall not be allowed into any laboratory except with the specific written permission of the laboratory director;
   
   b. shall not be allowed into any hazardous equipment or chemical areas, shops, mechanical space, or construction site without specific written permission of the appropriate supervisor.
   
   c. *Nonpatient* children under 12 years of age shall not be allowed into any clinical laboratory, treatment room, or other "restricted" area except with specific written permission of the clinic manager.
   
   d. If written permission is given in any of the above circumstances, children must be continuously supervised while in the area(s) specified.
   
3. No unauthorized persons, whether visitors or employees, shall be allowed into areas posted with restrictive warning signs (examples: "Danger-Asbestos," "High Voltage," "Caution - PCBs").

*End of Text — Return to Section 2, Page 1 Outline*
RIGHT TO SECOND OPINION/ MEMORANDUM

DATE: 

TO: 

FROM: Office of Environmental Health & Safety, Tulane University 

RE: Right to Second Opinion re Restrictions or Removal Due to Formaldehyde Exposure 

Following your recent exposure to formaldehyde and your subsequent visit to the Occupational Medicine Clinic or the Emergency Room of Tulane University Hospital & Clinic, Tulane University wishes to inform you of your right to seek the opinion of a second physician. A physician of your choice may review the findings of the initial physician and perform any additional examinations and tests he/she deems necessary. 

Upon receipt of this memorandum and/or the written opinion of the initial physician, you have 15 days to inform your supervisor and the Tulane Office of Risk Management of your intention to seek a second opinion and to make an appointment with the second physician. 

Please note that if the written opinions of the two physicians differ, steps will be taken to resolve the difference. Ultimately, a third physician, acceptable both to you and to Risk Management, may be asked to review all findings and to resolve the issue. The recommendations of the third physician shall be adopted unless an agreement is made otherwise. 

ACKNOWLEDGMENT 

I have read the foregoing memorandum and understand that I have been informed of my right to a second medical opinion in accordance with the Occupational Safety and Health Administration Formaldehyde Standard. 

_________________________ 
Signature 

_________________________ 
Date 

Print Name: ________________________________ 

PLEASE RETURN FORM TO: 

Office of Environmental Health & Safety 
Tulane University 
1430 Tulane Avenue, TW-16 
New Orleans, LA 70112
SECTION 3

EMPLOYEE SAFETY TRAINING

TULANE UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY
POLICIES AND PROCEDURES MANUAL

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REFERENCED FORMS

Employee Safety Training Acknowledgment 04F-OEHS
First Report of Injury/Illness 18F-OEHS

I. EMPLOYEE SAFETY TRAINING

Safety training and training documentation are mandated by federal, state and local regulations. This section addresses the 1) types of general safety training available, 2) topics covered in general training sessions, 3) persons responsible for training, and 4) the mandated recordkeeping associated with safety training. Job-specific, site-specific, or hazard-specific training are outlined elsewhere in this manual.

General safety training programs have been designed and are provided to assist employees in such tasks as: safe operation of work equipment, proper body mechanics in lifting and carrying, ergonomic set up of workstations, use of personal protective equipment, etc. Policies covered in these programs include: emergency preparedness, hazard communication, fire safety, hazardous materials/wastes safety, injury/illness reporting, etc. Information regarding general training programs, training materials, and assistance in developing training programs are available from the Office of Environmental Health and Safety (OEHS).
A. Types of Training

1. Orientation Training

   a. OEHS provides general safety training and information on the University's health and safety policies to new employees at orientation sessions scheduled by Human Resources. During orientation training employees are provided an overview of safety topics and programs in place at Tulane and information on how they may participate in these programs.

   b. Orientation training shall include a discussion of the University’s injury/illness reporting procedures that comply with federal Occupational Safety and Health Administration (OSHA) standards and regulations. As part of the discussion, employees are made aware of the First Report of Occupational Injury/Illness form (Form 18F-OEHS located in Appendix E of this manual) for reporting work related injuries/illnesses, the importance of prompt medical attention, and the time requirements for completing and submitting the form to both the University’s Office of Risk Management and OEHS. (See, Section 4, Injury/Illness Reporting, of this manual for further information.)

   c. Human Resources is responsible for recording the names of employees who participated in the orientation training and the date on which training occurred.

2. In-Service Training

   OEHS provides in-service training both routinely and at the request of DSRs, supervisors, principal investigators, or employees. In-service training is defined as “classroom” training where OEHS schedules a conference room or classroom and presents a lecture on a specific topic. On-line training is available on certain topics such as bloodborne pathogen screening. Contact OEHS regarding on-line topics or for scheduling an in-service training session.

   In-service training participants are required to sign an acknowledgment of training that is certified by the party conducting the training program. (See, Form 04F-OEHS, Employee Safety Training Acknowledgment in Appendix E of this manual.)

3. Supervisor/DSR Training

   OEHS provides training sessions for supervisors and departmental safety representatives, along with routine meetings to review and discuss various safety issues. OEHS shall use the same training acknowledgment as used in 1.2 above.

4. On-the-Job Training

   a. Responsibility for on-the-job training lies with supervisors or, for labs, with principal investigators. Supervisors/principal investigators may contact OEHS for assistance and training materials.

   b. Departmental safety representatives collect and submit to OEHS copies of training documentation prepared by supervisors/principal investigators.

   c. On-the-job training must be provided at the commencement of employment and continued until the employee is able to safely perform the job/task alone.
d. As with in-service training outlined above, verification of training must be provided on a Employee Safety Training Acknowledgment form which must be signed by the employee and certified by the trainer. The form must be retained by the department with a copy to the unit DSR who will in turn forward the form OEHS.

B. Guidelines for On-the-Job Training

Each employee must be trained to perform his/her job or task before being left to work alone. Supervisors/principal investigators should use the following guidelines in any on-the-job training program:

1. **Demonstrate Procedures**

   a. Use a step-by-step method for showing the employee the correct way of safely performing the job or task and repeat the step-by-step method as often as needed. Advise the employee of hazards, limitations of equipment, and protective measures available.

   b. Let the employee try the task while being observed, make suggestions on improvement, and have the employee repeat the task while being observed. If necessary, repeat the step-by-step instructions initially given. Continue the observation-suggestion routine until the employee can do the job safely alone.

   c. Conduct follow-up checks to ascertain whether the employee is following procedures and performing the task as instructed. If follow-up proves that the employee is making progress, acknowledge and praise the achievement. If progress is slow, re-instruct the employee.

2. **Emphasize Safety Precautions**

   a. Make certain the employee knows the location of first-aid stations, fire protection equipment, emergency showers and eyewash stations, personal protective equipment, and any other safety related equipment or devices that may be needed. Show the employee how to use the equipment and/or device and explain their limitations.

   b. Explain that safety rules must be obeyed and that there are penalties for failure to comply with safety practices and procedures. Make certain the employee is acquainted with the general contents of this policies and procedures manual, particularly with sections addressing potential hazards in his/her work area or occupation.

   c. Get the employee involved in discussing and promoting safety programs. Involvement helps to keep safety goals in mind.

3. **Review Site-Specific Operating Procedures**

   Work procedures customized to suit the location, tasks, and hazards of each work site are generally referred to as “site specific operating procedures” (in laboratories, this would be the “standard operating procedures” commonly referred to as SOPs). Site specific operating procedures are designed by Unit Heads (i.e., heads of departments, sections, centers, or programs or any number or combination of these components), DSRs, supervisors/principal investigators, and others familiar with the unique requirements of the area, and include identification of hazards, procedures and equipment available for protection from hazards, and
procedures for emergency response. Any on-the-job training should entail a review of these site specific operating procedures.

C. Recordkeeping

1. **Form 04F-OEHS, Employee Safety Training Acknowledgment**, must be completed as an acknowledgment that employees have received and understand the material presented in the training session.

2. Supervisors/principal investigators must retain Form 04F-OEHS in work area files and forward a copy to the unit's DSR.

3. DSRs must collect (from supervisory personnel) and submit Form 04F-OEHS to OEHS.

4. Training records shall be retained by OEHS for a period prescribed by law.

*End of Text – Return to Section 3, Page 1 Outline*
TRAINING RECORD FORM - INDIVIDUAL LISTING

COURSE INFORMATION

Course name and description (list topics covered):


Completion Date: Location: Trainer:

EMPLOYEE INFORMATION

Name:
Dept/Section: Dean/Director/PI:
Room/Lab Number(s): Bldg/Campus:

Please use the back of this form for any questions or comments regarding the training session.

ACKNOWLEDGMENT

I acknowledge that I have been provided training in, and understand the content of, the subject(s) listed under “Course Information” above. Further, I agree to follow the safety guidelines provided in the training session.

Date: Employee’s Signature

CERTIFICATION

I certify that the above named employee has been provided training on the subject(s) noted in “Course Information” above, and has demonstrated an understanding of the information by way of test, demonstration, evaluation or other similar means.

Date: Trainer’s Signature
SECTION 4
INJURY/ILLNESS REPORTING

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REFERENCED FORMS

First Report of Occupational Injury/Illness 18F-OEHS (OEHS version of OSHA Form 301)

I. OCCUPATIONAL INJURY/ILLNESS REPORTING

In accordance with Occupational Safety and Health Administration (OSHA) standards administered by the U.S. Department of Labor, Bureau of Labor Statistics, the University has been selected to participate in an ongoing survey of occupational injuries and illnesses. Participation mandates that all reasonable steps be taken to ensure that occupational injuries/illnesses be reported and investigated promptly and accurately, and that records of same be retained.

A. Policy

Policy regarding occupational injury/illness, applicable to all University facilities, mandates that occupational injuries/illnesses shall be reported and investigated promptly and that such reports be retained for a prescribed period of time. It further mandates that the Louisiana Workers' Compensation Rule LWC-16, Employee Notice, “Notice of Compliance to Employees,” be posted.
in a conspicuous place at all times for all employees to read. These same requirements apply for OSHA “plain language posters.” Finally, OSHA Form 300, “Log and Summary of Occupational Injuries and Illnesses,” must be maintained and kept for a period of five years.

B. Medical Facilities

Although the University’s employees are encouraged to use Tulane University Hospital and Clinic (TUHC) facilities, particularly the Occupational Medicine Clinic, for medical attention, outside care is not prohibited, especially in emergency situations where another facility is closer and time is a factor in treating the injury/illness.

Regardless of the Tulane facility where the injury/illness occurred, if the employee was exposed to a bloodborne pathogen, he/she must report immediately to the Occupational Medicine Clinic at TUHC in New Orleans for appropriate follow up care. The single exception is that employees of the Primate Center may go to Tulane’s current medical provider on the North Shore.

C. Reporting

Accurate and prompt reporting of injuries/illnesses provides the University with the statistical information needed to identify and isolate patterns of injury/illness. Investigation and evaluation of such problems help determine the corrective measures needed to prevent or reduce the possibility of injury/illness.

1. First Report of Occupational Injury/Illness

All occupational injuries/illnesses, serious or minor, must be reported on Form 18F-OEHS, First Report of Occupational Injury/Illness form (located in Appendix E of this manual), signed by the employee’s supervisor/principal investigator or Unit Head (i.e., head of a department, section, center, or program or any number or combination of these components), and submitted within 24 hours of injury/illness notification to the Office of Risk Management (Risk Management) and the Office of Environmental Health & Safety (OEHS). The employee and the employee’s supervisor/principal investigator should retain a copy.

If there is a death or injury involving multiple employee hospitalizations, the supervisor, principal investigator or Unit Head must immediately notify OEHS.

Whether the employee completes the form or his/her supervisor/principal investigator completes the form because the employee is unable to do so, the supervisor/principal investigator is responsible for its completion and timely submission to Risk Management and OEHS. If possible, the completed form should accompany the injured/ill employee to the Occupational Medicine Clinic or other treating facility.

The employee and the supervisor/principal investigator should both keep a copy of the form. The original and a copy should be distributed as follows:

Original:
Office of Risk Management
Tulane University
Uptown Campus, 300 Gibson Hall
6823 St. Charles Ave
New Orleans, LA 70118

Copy:
Office of Environmental Health & Safety
Tulane University
1430 Tulane Ave, Box TW-16
New Orleans, LA 70112
2. Responsibilities of Parties Involved in Injury/Illness Reporting

a. Supervisors/Principal Investigators

   1. Supervisors/principal investigators must ensure that both sides of the First Report of Occupational Injury/Illness form are completed and that the original form is forwarded to Risk Management with a copy to OEHS within 24 hours of injury/illness notification.

   2. In an emergency, the supervisor/principal investigators shall make known to the treating facility, whether TUHC or another facility, that the injury/illness is classified as an “occupational” injury/illness and that any medical reports concerning treatment of the injured/ill employee resulting from the injury/illness must be sent to Risk Management and OEHS.

   3. Following a medical examination wherein a treating physician determines that the employee’s injury/illness warrants restricted work duties or an adjustment in the employee’s work environment (e.g., work station adjustments, relocation of work station, etc.), the supervisor/principal investigator must ensure that the physician’s orders are implemented. The supervisor/principal investigator may contact OEHS if the limitations imposed on the employee’s job or work environment require further assessment to satisfy the physician’s orders.

   4. Supervisors/principal investigators shall encourage employees under their supervision to notify them of any potentially hazardous situation in the work environment. If a supervisor/principal investigator does not follow up on an employee’s complaint, the employee may follow the unit’s chain of command. (A unit is a department, section, center, or program or any number or configuration of these components.) If nothing is done, the employee may by-pass the chain of command by reporting directly to OEHS.

b. Employees

   1. Employees must report injury/illness to their supervisors/principal investigators ASAP or within 24 hours regardless of how insignificant the injury/illness may seem.

   2. Employees are encouraged to report to TUHC Occupational Medicine Clinic, Emergency Room, or other Tulane facility for treatment.

   3. Employees must provide written notification to their immediate supervisors/principal investigators of any lost or restricted work days ordered by a treating physician and also inform their supervisors/principal investigators of any changes and/or reevaluations that may delay a return to work.

   4. Employees should have any follow-up medical bills forwarded directly to Risk Management. Supporting medical documentation should be sent both to Risk Management and to OEHS.

   5. An employee who has been out of work due to work-related injury/illness may not return to work until certified to do so by the attending physician. The certificate to return to work shall be forwarded to Risk Management with a copy to OEHS.
6. Employees should report any potentially hazardous situation or any health or safety concern to their immediate supervisors/principal investigators. If no response is forthcoming, employees may follow the unit’s chain of command. If nothing is done, employees may bypass the chain of command by reporting directly to OEHS.

c. **Health Care Providers** at TUHC or at any other treating facility shall:

1. Provide appropriate medical care to an injured/ill employee.

2. Complete a medical status report clearly indicating the diagnosis of the injury/illness, treatment, contemplated length of disability, if any, and if hospitalized, the name of the hospital.

3. Submit completed medical status reports and any other related information to Risk Management, OEHS, and to the Occupational Medicine Clinic when follow up treatment is required. All such documents must be signed by the treating physician.

d. **Risk Management**

1. Risk Management shall review and evaluate the information provided in the First Report of Occupational Injury/Illness form, and, if it is determined that the injury/illness meets one or more of the necessary criteria, an “Employer’s Report of Occupational Injury or Disease” form (State of Louisiana, Office of Workers’ Compensation Administration Form WC-1007) shall be sent to the University’s Workers’ Compensation Insurance Company. Criteria warranting submission of Form WC-1007 include: a) more than seven days of disability; b) injury resulting in death; or c) amputation or disfigurement.

2. Distribution of Form WC-1007: The carrier copy and office copy are sent to the University’s Worker’s Compensation Insurance Company; the employer’s copy is retained by Risk Management; the medical copy and injured employee’s copy shall be forwarded to the injured/ill employee with instructions to return the medical copy completed by the treating physician and returned to Risk Management.

3. Risk Management, Human Resources, or OEHS shall supply all units with First Report of Occupational Injury/Illness forms, or copies may be made from the form provided in Appendix E of this manual.

4. Risk Management is responsible for the completion and accuracy of the information provided on the First Report of Occupational Injury/Illness form.

5. Risk Management shall assign an OSHA log number for a reported injury/illness incident and forward the original First Report of Occupational Injury/Illness with log number to OEHS.

6. Risk Management shall assist OEHS by providing any additional information relative to occupational accidents, injuries, illnesses.

7. Risk Management, in association with OEHS, must investigate: a) any incident that results in a temporary or permanent disabling injury/illness or loss of work time; b) incidents that do not result in disabling injury/illness but are “near misses” that might
have developed into disabling injury/illness; c) an epidemic of incidents resulting in minor injuries/illnesses that represent a substantial cumulative loss.

e. **OEHS**

1. OEHS shall ensure compliance with OSHA and state Department of Labor regulations regarding occupational injuries/illnesses reporting and recordkeeping.

2. OEHS shall maintain all First Report of Occupational Injury/Illness forms (Form 18F-OEHS same as OSHA Form 301), OSHA Form 300, **Log and Summary of Occupational Injuries and Illnesses**, and OSHA 300A, **Summary of Work Related Injuries/Illnesses**, for a period of five years. In the event of an OSHA audit, all reports on file must be produced within four business hours.

3. Based on criteria established by OSHA, OEHS shall a) determine whether or not reported injuries, illnesses, deaths and multiple employee hospitalizations are recorded in the OSHA Form 300 log, and b) shall report any work related fatality or multiple employee hospitalizations to OSHA within eight hours of notification of such occurrence.

4. **Recordkeeping and Submittal**:

<table>
<thead>
<tr>
<th>OSHA Form No.</th>
<th>Retention Period</th>
<th>Post/Submit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form 300</td>
<td>5 years</td>
<td></td>
</tr>
<tr>
<td>Form 300A</td>
<td>5 years</td>
<td>Post for 90 days Feb 1-Apr 30</td>
</tr>
<tr>
<td>Form 301 (18F-OEHS)</td>
<td>5 years</td>
<td></td>
</tr>
<tr>
<td>Form 3165 “It’s a Law” poster</td>
<td></td>
<td>Post at all times</td>
</tr>
<tr>
<td>State Department of Labor poster</td>
<td></td>
<td>Post at all times</td>
</tr>
<tr>
<td>Survey of Occupational Injuries/Illnesses</td>
<td>5 Years</td>
<td>Submit annually to U.S. Department of Labor, Bureau of Statistics</td>
</tr>
<tr>
<td>Report of Death or Multiple Employee Hospitalizations (3 or more employees)</td>
<td></td>
<td>Report must be submitted to OSHA within 8 hours of the report of such an occurrence</td>
</tr>
</tbody>
</table>

5. OEHS shall maintain an “open door” policy whereby any employee who, having followed the normal chain of command in reporting potentially hazardous situations, finds that no action has been taken to eliminate a reported hazard, OE HS shall investigate and, if necessary, advise those responsible for the unit that corrective measures are needed.
6. OEHS shall inform all units of any trends or patterns involving accidents or illnesses that may need further study and/or possible corrective action.

7. OEHS, at the request of RiskManagement, shall investigate incidents/injuries listed in D.2 below.

D. Investigation

Both Risk Management and OEHS have investigative authority in matters concerning occupational injuries or illnesses.

1. ReasonsforInvestigation

An incident is investigated primarily a) to ascertain whether the incident was indeed work-related for Workers’ Compensation and OSHArecordkeeping purposes, and b) to detect incident patterns in an effort to prevent recurrences.

2. Incidents/InjuriesInvestigated

An investigation can be activated for:

a. any incident resulting in a fatality or the hospitalization of three or more employees;

b. any incident that results in a disabling injury/illness or loss of work days;

c. incidents that do not result in disabling injury/illness but are “near misses” that might in develop into disabling injury/illness if conditions remain unchanged;

d. an epidemic of incidents resulting in minor injuries/illnesses that represent a substantial cumulative loss;

e. work-related muscular skeletal disorders or repetitive motion injuries;

f. hearing loss injuries in jobs where noise exposures may be the causative factor;

g. trends in injuries or illnesses.

*End of Text — Return to Section 4, Page 1 Outline*
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   B. Responsibilities
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ADDITIONAL READING

Asbestos Management Section 21
Emergency Response Section 1
Facilities Services Section 24
Hazard Communication Section 12
Hazardous Materials Safety Section 29

REFERENCED FORMS

Confined Space Entry Permit 09F-OEHS
Confined Space Hazard Addendum 08F-OEHS
Hazard Communication Addendum 05F-OEHS
Hot Work Permit 10F-OEHS
I. CONTRACTOR SAFETY

This section addresses health and safety requirements for contract work involving building, renovation, remodeling, or modification of Tulane facilities. Because work of this type, especially if conducted in or around occupied buildings, may present situations or conditions that could adversely impact the health and safety of Tulane personnel, and/or cause harm to the environment, it is of absolute importance that safety issues in construction be addressed.

The policies and procedures set forth in this section are meant to “supplement” applicable federal, state, and local governmental standards and codes, industry standards and codes, and the contractor’s own safety program by explaining how safety protocol involving construction is handled at Tulane facilities and what is expected of contractor’s who agree to work on Tulane construction projects. They are not intended to replace a contractor’s own safety program, nor do they purport to summarize all occupational and environmental regulations governing construction safety.

The contents of this section shall be used as a general health and safety reference for contractors working at Tulane facilities, and for Tulane employees involved in hiring contractors, preparing construction contracts, reviewing contract documentation, managing construction projects, and inspecting contract work sites. Only with regard to hiring policy and required approvals does this section address contract work for maintenance, goods, or services that are handled through standard service contracts.

A. Hiring Policy and Notification Requirements

1. To ensure compliance with federal, state, and local regulations regarding construction, remodeling, maintenance and service mandates, Facilities Services is the only department authorized to hire contractors on behalf of the University. All requests for contractors services must therefore be processed through Facilities Services.

2. To ensure compliance with federal, state, and local regulations regarding occupational and environmental health and safety, the Office of Environmental Health and Safety (OEHS) must be notified before contractors are hired for construction, remodeling, maintenance, and services. OEHS must also be notified and must grant approval before any contractual arrangement is made for the acquisition of hazardous materials and/or services involving the supply, transport, or disposal of hazardous materials.

3. OEHS must be notified of any asbestos removal by outside contractors at least 15 days prior to a request for bids, or, if bids are not requested, prior to the granting of the contract to allow adequate time for OEHS to assist with project coordination and/or monitoring. When asbestos
removal projects are to be performed by outside contractors, all parts of this policy shall be enforced through specifications prepared by a Tulane Asbestos Coordinator prior to bidding or granting of the contract. OEHS must review all bid proposals to ensure that contractor has followed all applicable health and safety guidelines. In the event of a contracted “emergency asbestos removal,” OEHS must be notified as soon as possible. (See Section 21 Asbestos Management of this manual.)

4. Some goods and services may be acquired by purchase order and handled through standard service contracts through the University’s Purchasing Department. There are, however, items that must be approved by OEHS before ordering (e.g., extension cords, chemical and biological hoods, biological safety cabinets, safety cans, etc.) A complete list may be obtained from OEHS and should be readily available for reference in the Purchasing Department.

As stated in 4.4.2 above, any order that entails the acquisition of hazardous materials or services involving the supply, transport, and/or delivery of hazardous materials, must also be approved by OEHS prior to purchase or the rendering of such services. For orders involving the acquisition of radioactive materials, Purchasing must verify that the department ordering the radioactive materials has a license to do so. Licenses are obtained by application from OEHS and the Radiation Safety Committee.

B. Responsibilities

The responsibilities outlined below for Tulane and contractor are not exclusive of those responsibilities set forth in the contract and in federal, state, and local codes and regulations.

1. Facilities Services

Facilities Services is responsible for:

a. Hiring contractors and vendors; requesting bids on all University projects; pre-certifying contractors and verifying insurance coverage; and, obtaining a signed standard contract prior to commencement of work.

b. Making certain that OEHS is included in the design and development stage of a construction project, and notifying OEHS before contractors are hired. Facilities Services should also make certain that OEHS is given the opportunity to review, at minimum, conditions specific to the project that would entail an assessment of occupational and environmental health and safety requirements.

c. Notifying OEHS if a vendor is to supply, transport, or dispose of hazardous materials (including radioactive materials).

d. Notifying OEHS of any asbestos removal by outside contractors prior to arequest for bids or before granting a contract.

e. Designating a project manager who shall serve as a liaison between contractor and Tulane.

f. Providing a completed Confined Space Hazard Addendum (Form 08-OEHS in Appendix E of this manual) as part of the contract documentation, and notifying OEHS if the contract work involves entry into a permit-required confined space.

Contractor Safety / Page 3 / SECTION 5
g. Providing a completed Hazard Communication Addendum (Form 05F-OEHS in Appendix E of this manual) as part of the contract documentation outlining Tulane’s and contractor’s responsibility for exchanging information on inherent hazards in the project site, equipment, or chemicals to be used.

h. Assisting contractor with injury/illness reporting procedures and submission of injury/illness documentation to Tulane’s Office of Risk Management.

2. ProjectManager

The Project Manager, a representative of Facilities Services, is responsible for:

a. Providing a copy of the contractor’s health and safety plan to OEHS prior to the pre-construction conference.

b. Ensuring that OEHS is represented at any pre-construction meetings with contractor and any safety review meetings held during the course of the project.

c. Providing OEHS and Security with the contractor’s tentative on-site construction schedule and immediate written notification of changes.

d. Monitoring the contractor’s work performance to ensure that contract workers are complying with the contractor’s health and safety plan and with pertinent environmental, health, and safety regulations. Any questions regarding compliance with specific regulations should be referred to OEHS.

e. Ensuring that all required permits are completed by the contractor and signed by the appropriate authorizing unit. The project manager should also make certain that those permits that require posting are in fact being displayed at the work site.

f. Notifying OEHS immediately of construction accidents and providing OEHS with a copy of the contractor’s accident report.

g. Notifying OEHS immediately of any OSHA or other agency complaint and/or inspection of the jobsite. An OEHS representative must be present at any such inspections.

3. OfficeofEnvironmentalHealth&Safety

OEHS is responsible for:

a. Advising contractors of hazards, procedures and precautions related to entry into permit-required confined spaces.

b. Advising contractors of any hazards known to be present at the proposed work site, including any hazardous materials.

c. Investigating the work site if it is suspected that the contractor’s safety plan is not being properly implemented.

d. Investigating serious injuries/illnesses, major incidents or “near-miss” incidents.
4. Contractor

The following responsibilities apply to contractors (and their employees), subcontractors (and their employees), and where applicable, vendors (and their employees).

The contractor is fully responsible for its sub-contractors (and their employees) to the same extent that it is responsible for its own employees, and any references in this section to the contractors responsibilities toward its employees shall be understood to apply also to its sub-contractors and their employees as well.

Contractors are responsible for:

a. Meeting all applicable federal, state and local regulations and ordinances and employing with same for the duration of the contract. Failure to do so may result in removal from a project.

b. Submitting, along with its bid, a comprehensive written health and safety plan for the subject project.

c. Gaining familiarity and ensuring compliance with the provisions outlined in this section of the policies and procedures manual regarding contractor safety.

d. Providing its employees with the necessary training, medical exams, and safety equipment. Specifically, contractor must ensure that its employees are trained to handle jobs specific to the project as, for example, hot work, confined space entry, lockout and tagout, hazard communication, emergency response, etc. All such training must be documented.

e. Ensuring that its employees have the appropriate medical clearance (if any are needed) prior to the start of work.

f. Providing its employees all safety and personal protective equipment (PPE) required to complete the work and ensuring that the safety equipment and PPE are properly used, worn, and maintained. (If work is to be done in an area requiring PPE, contractors must wear University required PPE.)

  g. Providing a list of all hazardous chemicals that will be used at the jobsite and ensuring that copies of the material safety data sheet (MSDS) for each chemical is readily available to all construction workers and to OEHS upon request.

h. Obtaining the necessary disposal manifests and approvals prior to arranging for waste shipments. These activities may be arranged through OEHS.

i. Providing a competent, well-trained supervisor in charge at the site at all times during which its employees or those of its subcontractors are present.

j. Reporting all workplace chemical spills, occupational injuries and illnesses to the project manager and OEHS.

k. Making certain that employees wear the appropriate identification (contractor ID badges) and are conducting themselves in a professional manner.
C. Compliance

1. Tulane

Tulane personnel involved in the hiring of contractors for construction work must comply with
the hiring and notification requirements outlined in LA above. Any failure to comply may result in substantial fines and costs to the unit in violation. Failure to notify and consult with
OEHS before hiring contractors and vendors, especially those who supply, transport or
dispose of hazardous materials, as outlined in LA above, may result in violations, the cost of
which may be borne by the unit in violation.

2. Contractor

The contractor’s safety program, which should include provisions for health and safety
inspection by trained contractor personnel, shall be generally relied upon by Tulane to provide
health and safety inspections of the work site on a routine basis. However, Tulane, through
OEHS, reserves the option to inspect the work site either randomly or by notice. If such
inspection should reveal violations of the policies and procedures outlined herein, or any other
violations of health and safety standards and codes not specifically covered in this general
guideline but of which the contractor is expected to be aware, C.2.a-b below shall apply.

a. If OEHS should note any situation of non-compliance by the contractor, its employees,
or subcontractors, of the policies and procedures set forth herein or any other health and
safety standards and codes not specifically covered in this general guideline but of which
the contractor is expected to be aware, OEHS shall verbally report such violations to the
project manager with a follow up in writing. All violations brought to the attention of the
project manager must be documented in a memo to file for the project. Failure to correct
the violation or continued violations shall be grounds for termination of the contract.

b. If OEHS should find violations by the contractor, its employees or subcontractors, that
pose an imminent danger, an “order to stop work” shall be issued immediately and
reported to the project manager. Such violations may be grounds for termination of the
contract.
II. Safety Issues in Project Preparation

A. Project Development & Design Review

To ensure that health and safety issues are addressed in the initial stages of a proposed project, representatives from OEHS shall join architects and engineers in the development and design stage of a project to highlight any potential hazards in or around the facility or facilities for which the project is being designed. OEHS shall also discuss in greater detail any federal, state, and local health and safety requirements to be taken into consideration in the development of certain types of projects such as: storage facilities for hazardous materials or equipment; renovations that would disturb hazardous materials such as asbestos; projects involving waste disposal issues.

B. Contractor Selection

Safety issues cannot be overlooked in contractor selection. Contractor selection should take into consideration the contractor’s health and safety plan and other factors related to occupational and environmental health and safety including, but not limited to, the contractor’s: 1) experience modification rate; 2) OSHA injury/illness records for the previous five years; 3) back safety awareness program; and 4) substance-abuse program. These factors should be outlined in any request for bid packages.

C. Contractor’s Safety Plan

Contractors shall be required to submit a comprehensive health and safety plan along with their bid package. The plan should cover all aspects of onsite construction operations and activities associated with the type of project proposed including plans for fire protection and prevention. The plan must comply with all applicable health and safety regulations and any project-specific requirements as outlined in the bid proposal.

Acceptance of the contractor’s health and safety plan is strictly an acknowledgment that the plan generally conforms to the requirements of the contract. However, to ensure the protection of contractor’s employees and any Tulane employees in the area of the work site, the contractor must emphasize that the contractor is responsible for enforcing the requirements of its health and safety plan.
D. **Contract Preparation**

Persons responsible for preparing contract documentation must ensure that the final contract language requires the contractor to: 1) meet all applicable federal, state and local occupational and environmental health and safety regulations, agency standards, and University policies; 2) provide its employees with the necessary training, medical exams, and safety equipment; 3) submit a written comprehensive health and safety plan for the specific contract work undertaken; 4) take responsibility for enforcing measures outlined in its health and safety plan; 5) comply with all applicable federal, state, and local regulations, agency standards, and University policies with violation constituting a default and grounds for termination of the contract.

E. **Contract Review**

A construction contract will generally contain both standard requirements and requirements unique to a given project. These unique requirements or “special conditions” shall include health and safety issues relevant to the nature and scope of work to be done. It is therefore important that OEHS be given the opportunity to review the contract before a final draft is presented to the contractor. A review may be accomplished either through a meeting of contract documentation personnel that would include representatives of OEHS, or by allowing OEHS representatives an “online” review using Facilities Auxiliary Services Technology (FAST) software. An online review using FAST would allow OEHS to both review and submit revisions or comments.

III. **Pre-Construction Requirements**

A. **Pre-Construction Conference**

B. **Contract Worker Orientation**

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### III. PRE-CONSTRUCTION REQUIREMENTS

Before any construction begins, representatives of the contractor and Tulane shall meet to review, among other things, the responsibilities of each party with regard to these health and safety issues that are specific to the nature and location of the construction project.

**A. Pre-Construction Conference**

Prior to the commencement of any work on a construction project, representatives of the contractor, Facilities Services, the project manager appointed by Facilities Services, and OEHS shall meet for the purpose of reviewing, among other things:

1. the responsibility of each party during the course of the project;

2. the projected work schedule;

3. permits that shall be required depending on the type of work involved;
4. the contractor’s health and safety plan which should include a fire protection/prevention plan;

5. the contractor’s list of hazardous chemicals and accompanying material safety data sheets;

6. OEHS’s guidelines for construction safety as outlined in IV below; and other relevant sections of this policies and procedures manual including, but not limited to: Section 1. Emergency Response; Section 12. Hazard Communication (see, especially VII); Section 21. Asbestos Management; Section 26. Fire Safety; and, particularly, Section 24. Facilities Services.

7. OEHS’s information (in keeping with the OSHA Hazard Communication Standard) on hazards present at the work site and written procedures and permit requirements for lockout/tagout, confined space entry, excavations/trench work, or hot work.

B. Contract Worker Orientation

If there is a need, the Project Manager shall conduct an orientation to acquaint contract workers and supervisors with the facility and the work site, and to address any residual questions that remain before the start of the project.

IV. Construction Safety Guidelines

   A. Preparations
   B. Work Schedule
   C. Requirements of Contract Personnel
   D. Equipment, Tools, Industrial Vehicles
   E. Emergencies
   F. Fire Prevention and Protection
   G. Hazardous Materials
   H. Confined Spaces
   I. Environmental Impact

IV. CONSTRUCTION SAFETY GUIDELINES

The following are general guidelines to be reviewed at the Pre-Construction Conference. Some of this information may already be addressed in the contract under standard and/or special conditions or may be part of the contractor’s own health and safety plan. Nevertheless, all items should be reviewed and discussed to ensure that applicable guidelines for the specific project are in place before and/or during construction.

A. Preparations

   1. Site Security and Pedestrian Protection

       The contractor must be responsible for securing the work site from unauthorized access and for ensuring that all loose materials are secured at the end of the work shift. The contractor shall
further be responsible for providing protection for pedestrians by ensuring that the Standard Building Code requirements for the safety of pedestrian traffic (e.g., signage, walkways, fencing, handrails, posting of flagmen, and closure of walkways and sidewalks) are upheld. If overhead or elevated work presents a potential hazard to persons below, the contractor must erect barricades to restrict unauthorized access to these areas. In some instances, an attendant may be required to ensure that work areas near public walkways and high traffic areas are kept clear.

2. **Parking and Storage**

   The contractor must make provisions for employee and/or subcontractor parking, as well as provisions for storage of construction materials, neither of which shall be provided by Tulane. Contractors are fully responsible for the safety and security of any contractor-owned equipment (vehicles, trailers, container bins, tool boxes, etc) brought onto a Tulane facility.

3. **Use of Premises**

   a. Tulane must inform the contractor if the work area shall continue to be occupied during the course of the project. If this is the case, the contractor shall schedule work so as to cause as little in convenience as reasonably possible; cause no obstructions except as is immediately necessary and for no longer than required; make certain that floors and walkways are kept free of debris, tools, etc.

   b. Contractor shall make necessary arrangements for warehouse space for storage of materials until such time as the materials are scheduled for immediate installation.

   c. Contractor shall maintain clear passage along corridors and walks. Tulane shall endeavor to keep personnel and visitors from the work area. Contractor, however, is responsible for enforcing all safety precautions.

   d. Tulane and contractor shall have to coordinate the contractor’s use of elevators for delivery of materials, equipment or tools, as well as the time in which such deliveries may be made to the work site.

   e. If the contractor’s employees or subcontractors are to use the facility’s restrooms, Tulane should designate which restrooms are to be used and stipulate that contractor is responsible for maintaining the restroom’s cleanliness. If the restroom is to be used exclusively by contract personnel, signage should be placed on the restroom door to prevent usage by Tulane personnel.

4. **Utilities**

   Tulane shall provide only temporary utilities from existing panel boxes while contractor shall provide the temporary connections. Contractor must restore utilities to the original condition prior to completion of work. If the contractor needs to have electrical mechanical services cut or suspended, it must notify Facilities Services in writing. The actual cutting of utilities and auxiliary systems services shall be done by Facilities Services personnel only.
5. **Permits**

Contractor must obtain and conspicuously post at the worksite any permits required for specific types of work such as hot works, confined space entry, excavation or trenching.

6. **Special Hazards**

Work involving the following hazards must be coordinated in advance with OEHS: hot work; excavation/trenching; asbestos; lead-based paint; permit-required confined space entry; shutdown of any fire alarm, detection, or suppression system; restricted access to fire exits.

7. **Work Site Documentation**

In addition to the permits that must be posted at the work site, contractor must ensure that the following documents are also available at the worksite: a) a copy of the contractor’s health and safety plan, b) a copy of the “Contractor Safety” section of this manual and other relevant sections of this manual, and c) material safety data sheets for all hazardous chemicals being used at the work site.

8. **Fencing**

If the work site is to be fenced, contractor must ensure that entrances and exits to the facility are not locked or blocked, and that signs are posted on the fence identifying the area as restricted entry for authorized persons only. Contractor must take the responsibility for securing the area at the end of the work shift.

**B. Work Schedule**

1. Contractor shall provide OE HS and the project manager information regarding project construction time or anticipated construction time.

2. Work should be scheduled within normal work hours unless otherwise approved or specified. Normal work hours are Monday through Friday from 8 a.m. to 5 p.m.

3. The project manager must approve scheduled weekend or overtime work.

**C. Requirements of Contract Personnel**

1. **Identification**

All contract personnel are required to wear contractor identification badges. ID badges must be visible at all times while performing work on campus.

2. **Conduct**

Contractor personnel are expected to adhere to University policy prohibiting the carrying of weapons, fighting, intoxication, the possession or use of alcohol or controlled substances, stealing, and falsification of records. An individual’s prescription medication is acceptable only when ingestion will not affect job performance according to the employee’s attending physician.
3. **Housekeeping**

Contractor personnel shall keep work areas—especially walking and working surfaces and exit corridors—clean and free from debris that could cause slipping and tripping hazards. Tools and materials shall be kept and stored in an orderly fashion. Dismantled or surplus materials, dirt, lumber, concrete, metal, insulation, paper, etc., shall be promptly cleared and disposed of by the contractor. General clean up and disposal of debris is required each day. Tulane has the authority to require additional cleaning prior to contractor’s resumption of work.

4. **Smoking**

Smoking is not allowed inside any University building or restricted area. Smoking is permitted in designated smoking-permitted areas outside. Non-combustible waste containers shall be used for disposal of waste smoking materials.

5. **Fall Protection**

All contractor personnel working above ground in areas not protected by standard guardrails and work platforms must wear a full body harness and shock absorbing lanyard that is secured to a structural support meeting the requirements of OSHA standards. Areas where standard guardrails and work platforms have been temporarily removed for access, revision, addition, etc., shall be barricaded and clearly marked of the impending danger.

6. **Personal Protective Equipment**

Contractor personnel are required to properly wear and maintain any personal protective equipment provided to them by the contractor. If working in areas requiring PPE, contractors must wear the University required PPE (extra safety glasses or goggles in labs/areas using corrosive materials).

D. **Equipment, Tools, Industrial Vehicles**

Contractors must ensure that all equipment used at the work site is in safe operating condition, that equipment guards are in place, and that contractor is meeting or exceeding all applicable governmental regulations (OSHA, EPA, DOT, etc.). The contractor’s equipment is subject to inspection by OEHS or the project manager at any time. Such inspections or failure to inspect do not relieve the contractor from responsibility for the safe operation of its equipment.

Contractor should bear in mind that the guidelines provided herein are supplementary and do not purport to cover all governmental regulations on the subject.

1. **Portable Ladders and Scaffolds**

   Contractor is referred to **Section 24. Facilities Services, IV Ladders and Scaffolds**, of this manual.

2. **Electrical Tools and Equipment**

   a. All electrical hand tools used must be protected via a ground fault circuit interrupter (GFCI) or grounding assurance program. Equipment and piping cannot be used for grounding purposes.
b. Lighting used inside confined spaces must be explosion proof and must not exceed 12 volts unless a GFCI is provided and used.

c. Only campus electrical service outlets equipped with proper plug-ins shall be used; adapter “pigtails” are not to be used.

d. Extension cords supplied by contractor shall be checked monthly.

3. Powered Industrial Trucks

Contractor should review Section 24. Facilities Services, of this manual covering safety guidelines for use of powered industrial trucks and shall ensure that employees designated to operate such vehicles are adequately trained, or retrained, to operate them safely and efficiently.

4. Internal Combustion Engine

Contractors planning extensive use of industrial trucks powered by internal combustion engines, shall make provisions for CO monitoring. Monitoring records shall be made available to the project manager and OEHS.

5. Cranes and Other Lifting Devices

a. Cranes shall be operated only by trained and experienced operators. The contractor is responsible for ensuring that the crane has been properly sized for the job and is properly maintained and inspected.

b. Tag lines are required to secure materials while being moved or handled with cranes or other mobile equipment.

c. All cranes working in the vicinity of overhead power lines shall be grounded and shall be equipped with proximity guards. Minimum clearance between the lines and any part of the aerial lift shall be at least 10 feet. Use of personnel baskets on cranes must comply with OSHA standards.

6. Lockout/Tagout Procedures

The contractor is required to comply with Tulane’s lockout/tagout procedures that require the contractor to provide individually keyed locks for each employee. The procedure requires that all energy sources be locked out or tagged out by each worker or crew with potential exposure. The procedure also requires that each worker in a crew lock out the “lock box.” (See Section 24. Facilities Services, VIII., Equipment Lockout/Tagout, of this manual.)

E. Emergencies

1. Work Stoppage and Evacuation

Upon hearing a fire alarm or evacuation announcement over the public address system, the contractor must stop all work, including welding and burning activities, and must shut off all energized equipment.
If evacuation is necessary, contractor personnel shall evacuate the building using stairwell exits. When all personnel have reached a safe location, the foreman should take a head count. If any personnel are unaccounted for, the foreman should report the missing person(s) to emergency personnel.

Buildings should not be reentered, nor activities resumed until the fire department, Security, or other authorized emergency personnel have announced an “all clear” message to reenter and resume work activities.

2. Medical/Treatment

The contractor shall provide first aid supplies and a sufficient number of employees on site that are trained in first aid. If additional first aid is required beyond the expertise of the trained first aid employee, call 911 or campus Security. The caller should identify the area where assistance is needed, type of injury or accident, his/her name, and the contractor’s name. The caller should not hang up until all the information has been verified.

Contractor should review Section 1, Emergency Response, II.B and III.A-C, of this manual, for guidelines in handling minor personal injury or work site emergencies or major emergency situations while awaiting the arrival of emergency response personnel.

3. Reporting Hazardous Situations

If contract personnel observe a fire, chemical release, downed electrical wires, or other such incident, they shall report to campus Security immediately. For off campus facilities, contract personnel should call 911.

4. Injury/Illness Reporting

a. Contractor personnel are required to report all occupational injuries/illnesses or “near-miss” incidents to their supervisor. The supervisor must in turn notify the Tulane project manager. The project manager shall act as liaison between the contractor and Tulane’s Office of Risk Management.

b. Within 24 hours of an incident, the contractor shall furnish Risk Management with a copy of the First Report of Occupational Injury/Illness form. If a person is seriously injured, the contractor shall keep Risk Management informed of the person’s condition.

c. If the contractor has an unusual happening, such as a serious fire, explosion, fatality, or other serious incident, the contractor shall notify Risk Management immediately. The contractor shall coordinate any news releases with the Public Relations Department on the campus where the work is being performed.

d. In the event of a fatality or multiple hospitalizations, the contractor must report same to the federal Occupational Health and Safety Administration (OSHA) within a time and manner prescribed by that agency.

F. Fire Prevention and Protection

Contractor is encouraged to review Section 26, Fire Safety, and Section 1, Emergency Response, of this manual.
1. **FireProtection/PreventionPlan**

Contractor shall prepare and carry out an effective fire protection and prevention plan that shall comply with current industry codes and standards and any provisions for fire protection and suppression set forth in this section. The fire protection/prevention plan shall be part of the comprehensive safety and health plan submitted by the contractor with its bid package.

2. **Exits**

   a. Contractor shall provide free and unobstructed access to exits. Building areas under construction must maintain escape facilities for construction personnel at all times. Daily inspections of means of egress must be conducted by the contractor and documented.

   b. Contractor shall provide free and unobstructed access within the project site to emergency services and personnel.

   c. If the construction work requires the temporary blockage of a fire exit, contractor shall notify OEHS in advance and shall work with OEHS in devising an interim plan to compensate for the temporary blockage.

3. **FireExtinguishers**

Distinctly marked fire extinguishers rated 2A:40B:C or greater shall be suitably placed as follows:

   a. One or more on each floor of buildings with at least one located adjacent to each stairway.

   b. At least one located outside but not more than 10 feet from the door opening into any room used for storage of more than 50 gallons of flammable or combustible liquids.

   c. At least one within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas is being used.

4. **Detection/SuppressionSystems**

Contractor shall ensure that fire alarm detection and suppression systems are not impaired. OEHS must be notified in advance of any work that involves the shutdown of any fire detection, suppression, or alarm system. OEHS must also be notified if work will impair, obstruct or restrict access to building exits. OEHS shall work with contractor and project manager in developing interim fire safety measures if the type of work being done requires such.

5. **FlammableandCombustibleLiquids**

   a. All flammable liquids must be stored in FM/UL approved containers and in designated storage areas. Transfer of flammable liquids to containers and equipment must incorporate the use of grounding and bonding.

   b. No flammable or combustible liquids, or highly combustible construction materials shall be stored in a project area after the day’s work is completed.
c. Equipment refueling must be accomplished by using approved containers and methods. All vehicle engines must be turned off during refueling activities. Portable fuel containers should never be filled while placed on a lined truck bed.

d. Smoking is not permitted in areas where flammable and combustible liquids are used or stored. The University follows a no-smoking policy in all facilities.

e. See fire extinguisher requirements in F.3 above.

f. Contractor shall develop and enforce storage, housekeeping, and debris removal practices that reduce the flammable and combustible fire load of a building to the lowest level necessary for daily operations.

6. CompressedGasCylinders

OSHA compliance requires that the handling, storage, and utilization of all compressed gases in cylinders at Tulane campuses shall be in accordance with provisions of all Compressed Gas Association Standards as set forth in Pamphlet P-I(1965), Safe Handling of Compressed Gases and P-2, Safe Handling of Medical Gases. (See also, Section 30 Laboratory Safety, III.D, Standards for Handling Compressed Gases in Cylinders, of this manual for an outline of general safety and special precautions regarding CGCs.)

7. HotWork

Contractor should review Section 24. Facilities Services, V.D., Hot Work, of this manual regarding procedures for conducting hot work at Tulane facilities.

a. Hot work includes welding, torch cutting, sweating pipes, and any other task that produces open flames, sparks, or significant heat. If the contract work involves any of these activities, contractor must obtain a Hot Work Permit (Form 10F-OEHS in Appendix E of this manual) from Facilities Services or OEHS and submit it at least 24 hours before the start of work. The permit must be posted at the work site for the duration of the hot work.

b. Prior to the start or resumption of hot work, contractor must conduct an inspection of the area and review the precautions listed on the reverse side of the hot work permit.

c. Flammable material must be removed from the work area before starting hot work. Combustible materials must be removed or protected with a flame-retardant cover before starting hot work.

d. At least one ten pound multi-purpose (ABC) fire extinguisher must be provided for each area where hot work is being performed. The contractor is responsible for training its employees on the proper use of the fire extinguisher.

e. Contractor must ensure that all employees in the hot work area are informed of the nature, scope, and duration of the hot work as well as precautions to be observed.

f. If there are smoke detectors in proximity to the hot work area that are likely to be activated by smoke a nd/or released fumes, contractor must notify Facilities Services prior to commencement of work. Only Facilities Services, the Control Engineer, or Tulane Security are authorized to disconnect and reactivate fire detection devices.
g. When hot work is performed, contractor must provide fire watch personnel to stay at the job site for a minimum of 30 minutes after the time that the hot work activity has been completed.

8. Penetration of Fire Resisting Assemblies

Any penetrations through fire resisting assemblies shall be in accordance with the Standard Building Code (Section 05.4) to ensure the rating of the assemblies maintained. Contractor is required to obtain fire, smoke or penetration permits prior to beginning any project that requires a penetration of fire related or smoke related walls. The permit shall be reviewed and signed off by the designated parties selected by Facilities Services. The Fire and Smoke Penetration Permit shall be issued at the Pre-Construction conference.

G. Hazardous Materials

1. Hazard Communication

a. Contractor must provide OEHS with a list of all hazardous chemicals that are to be used by its employees while working on Tulane property and, if requested, must provide OEHS with an MSDS for each chemical listed.

b. Contractor must bear the responsibility for training its employees on the potential hazards of the chemicals they will be using.

c. Before work begins, contractor must be given an opportunity to review the written Hazard Communication Plan and the Hazardous Chemicals Inventory for the contracted work area. Contractors shall also be given an opportunity to review any relevant MSDSs. MSDSs shall be provided by OEHS or the project manager.

d. Each written contract entered into between Tulane and contractor or vendor must include a Hazard Communication Addendum to be completed and kept on file with the contract agreement.

2. Hazardous Material Spills

a. The contractor must provide adequate spill protection and shall not allow any oil, grease, fuels, lubricants, anti-freeze, paints, solvents, acids, alkalis, soil sediments, or contaminated liquids to migrate to any drain, ditch, or be spilled on the ground.

b. The contractor must report any spills immediately to OEHS. The contractor must take immediate action to contain the spill. OEHS shall coordinate clean up and disposal but all clean-up and disposal costs shall be charged to the contractor.

c. The contractor shall not discharge any materials, liquids, wastes, chemicals, etc., to any sump without the prior approval of OEHS. This includes the wash down of any parts or equipment in or on areas that eventually drain to ditches or sumps (e.g., parking lots, driveways around maintenance, etc.).
3. **Asbestos**

   a. **Planned Asbestos Project**

      1) Contractors hired for monitoring and for abatement (cannot be one and the same) shall be responsible to the Tulane Asbestos Coordinator for the scope of the project, and shall work with the Asbestos Coordinator, the OEHS Asbestos Abatement Liaison, and the University Project Coordinator to ensure that abatement activities are safely carried out.

      2) Contractors shall be responsible for all appropriate signage to ensure no one accidentally enters an abatement area.

      3) Both monitoring and abatement contractors must have attended and received a passing score from an LADEQ recognized course specifically designed for contractors.

      4) Contractor should review [Section 21. Asbestos Management](#), of this manual.

   b. **Emergency Asbestos Release**

      If in the course of construction work unrelated to a planned asbestos project, contractor discovers **asbestos-containing materials** (ACM), or suspects ACM, contractor shall notify OEHS and the Project Manager immediately. The suspect material shall not be disturbed further until it has been sampled and analyzed by trained, qualified personnel.

4. **Bloodborne Pathogens**

   a. If a construction project involves potential exposure of contract personnel to bloodborne pathogens or **other potentially infectious materials** (OPIM), the contractor must ensure that those employees who may be exposed follow the Exposure Control Plan for the Tulane facility where the contracted work is taking place and where the potential exposure exists. ([See, Section 40. Bloodborne Pathogens](#), of this manual for the appropriate Exposure Control Plans)

   b. If the contract work involves the closing out of a lab(s), contract personnel are advised to review [Section 30. Laboratory Safety, IV. Laboratory/Studio Close-Out](#), of this manual for lab close-out guidelines regarding the dismantling and removal of lab equipment.

   c. Read all cautionary signage.

   d. Wear appropriate protective equipment. If possible, a 1:10 dilution of household bleach shall be used to disinfect any tools or equipment that may become contaminated. After disinfection, equipment shall be rinsed with water and dried to prevent rusting.

5. **Waste (Generated Regulated Waste)**

   a. All solid waste generated by the contractor during a construction project shall be disposed in accordance with applicable laws.

   b. All hazardous waste material created by contractor at the work site must be handled in accordance with applicable regulations and Tulane University policies and procedures. The contractor shall ensure restoration of the work site to its original condition.
H. Confined Spaces

1. Contract work that involves entry into a permit-required confined space requires completion of a Confined Space Hazard Addendum form by Facilities Services personnel. This document is part of the contract documents.

2. Facilities Services is responsible for notifying OEHS before commencement of any permit required confined space work.

3. Before entry into a permit required confined space, OEHS shall apprise the contractor of inherent hazards and of any experience the University has had with the confined space in which the contractor would be working.

4. The contractor shall be notified of all hazards and precautions that affect the permit required confined space as documented in a completed Confined Space Entry Permit (Form 09F-OEHS in Appendix E of this manual).

5. The Confined Space Entry Permit must be dated and signed by an OEHS representative and the entry supervisor before entry is authorized.

6. The University is not responsible for providing any equipment or personnel needed by the contractor when entry involves only contractor personnel. This includes, but is not limited to, personal protective equipment, ventilation equipment, sampling/monitoring equipment, communications equipment, rescue equipment and emergency services.

7. If both contractor and University employees shall be working together in the same permit required confined space, OEHS shall oversee the coordination of entry operations. Provisions of needed equipment and personnel shall be arranged through mutual agreement of Facilities Services, contractor, and OEHS.

I. Environmental Impact

1. Excavation/Trenching

All excavations/trenching on Tulane property must be performed in accordance with applicable OSHA regulations (shored, sloped, shielded, barricaded, acceptable egress, etc.). The contractor is responsible for providing a “competent person” at every excavation site. This individual must be capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees. The assigned person must also have the authority to take prompt corrective measures to eliminate such conditions. He/she must be able, through experience or training, to determine the suitability of equipment and/or materials used for support systems, shield systems, and other protective systems.

Excavation/trenching that will be done with mechanical equipment requires a permit from OEHS. Contractor must provide an excavation/trenching plan to OEHS two days prior to excavation/trenching work.
2. **Blasting Operations**

   If the construction project is to include blasting operations, a written notification and description of blasting operations must be received by OEHS at least seven days prior to the actual operation. The request for blasting operations must be submitted to both the project manager and OEHS, and must include information as to the time, duration, purpose, type and amount of explosives, and the name and phone number of a contact person. Any exceptions to this notification shall be considered on a case by case basis.

3. **Dust Protection**

   a. Non-project areas must be protected from the effects of dust, smoke, vapors and fumes generated from construction activities.

   b. Dust partitions shall be constructed of non-combustible material. The use of polyethylene is restricted to areas that have automatic sprinklers.

   c. All construction sites shall have sticky walk-off pads placed immediately before entering as well as immediately before exiting the construction site to minimize the amount of dust being tracked throughout the building.

   d. Contractor must obtain approval from OEHS for any interim measures taken that may reduce level of life and fire safety in Tulane buildings.

4. **Noise Abatement**

   a. Contractor shall endeavor to keep the work area as quiet as possible, particularly when the project is in or near occupied buildings.

   b. Contractor is required to provide hearing protection devices for his/her employees during high noise operations or in any areas on campus where the noise level exceeds 85dBA or is deemed necessary by OEHS as required by the OSHA Occupational Noise Standard 1910.95.1

5. **Air Emissions**

   a. Contractors are prohibited from burning construction debris and other materials on Tulane property.

   b. Contractors are required to report any unplanned release of chemicals to the atmosphere to the Project Manager and OEHS immediately.

   c. Before any odorous chemical compounds (glues, solvents, paints, etc.) are used, the contractor or project manager must contact OEHS with information on the materials that will be used, where and for what duration. OEHS will therefore be able to respond to any inquiries or complaints about indoor air quality. Odorous compounds cause problems for building occupants, work may be suspended until further notice or rescheduled.
d. Appropriate precautions (found on container labels and MSDSs) regarding the use of chemical compounds must be observed. Where necessary, proper ventilation must be provided to ensure the safety of contract employees and building occupants.

6. Respirator Program

If respirators are required as part of the job, the contractor is required to have a written Respiratory Protection Program as described in OSHA Respiratory Protection Standard (29 CFR 1910.134). All affected contract employees must be fit tested, have medical approval to wear a respirator, and must be properly trained in respirator selection, use, maintenance, and storage. Contract personnel who are not included in the Respiratory Protection Program are prohibited from participating in respirator-required projects.

7. Waste Disposal

Any hazardous waste disposed of on behalf of Tulane University must be done in accordance with all applicable federal, state, and local regulations.

*End of Text — Return to Section 5, Page 1 Outline*
HAZARD COMMUNICATION ADDENDUM

Pursuant to OSHA CFR 1910.1200 (Hazard Communication Standard), Tulane University (Tulane) is responsible for making available to and advising ___________________ (Contractor) of information relating to any hazard inherent in the use, storage and/or handling of materials, equipment or chemicals to which contract employees might be exposed during the normal conduct of their activities under this contract or in a foreseeable emergency, while on Tulane property. In turn, it is the responsibility of Contractor to communicate this same information to its employees and subcontractors.

Further, Contractor will make available to Tulane information relating to any hazard inherent in the presence, use, storage and/or handling of materials, equipment or chemicals to which employees of Tulane might be exposed as a result of Contractor’s activities, as well as those of its subcontractors, under this contract or in a foreseeable emergency while on Tulane property.

To facilitate the exchange of information, the following persons are designated contacts for Tulane and Contractor respectively:

**TULANE**

<table>
<thead>
<tr>
<th>Department</th>
<th>Business Name</th>
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</thead>
<tbody>
<tr>
<td>Name of Contact</td>
<td>Name of Contact</td>
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<tr>
<td>Position or Title</td>
<td>Position or Title</td>
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<tr>
<td>Phone No.</td>
<td>Phone No.</td>
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<td>Date</td>
<td>Date</td>
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**CONTRACTOR**

<table>
<thead>
<tr>
<th>Department</th>
<th>Business Name</th>
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<td>Name of Contact</td>
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<td>Phone No.</td>
<td>Phone No.</td>
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<td>Date</td>
<td>Date</td>
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</table>
HAZARDOUS CHEMICALS INVENTORY

Dean/Director: ___________________________  Dept/Section ___________________________

Supervisor: _____________________________  Supervisor Phone No. _______________________

Person Submitting: ______________________  Campus/Mail Code _________________________

To be filled in by OEHS only:

Date Inventory Completed ____________

Date Inventory Submitted ____________

<table>
<thead>
<tr>
<th>Product or Chemical Name on Label</th>
<th>Have MSDS</th>
<th>Manufacturer Name</th>
<th>C.A.S. No. (If on Label)</th>
<th>Product or Catalog No. on Label</th>
<th>CONTAINER</th>
<th>Total Amt. on Hand</th>
<th>Units</th>
<th>Rm#/Bldg.</th>
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<td></td>
<td>No. on hand</td>
<td>Size (mlg., mg, lbs)</td>
<td>Type (glass, plastic, etc)</td>
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</table>

See reverse side for instructions on completing this form.


**INSTRUCTIONS FOR COMPLETING
HAZARDOUS CHEMICALS INVENTORY**

The Hazardous Chemicals Inventory form is used for recording ALL hazardous chemicals, products, or materials for which Tulane must maintain a Material Safety Data Sheet (MSDS) under the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200). These materials can be anything from acetone to zinc, bleach, alcohol, cleansers, etc.

Supervisor/principal investigators are responsible for submitting the completed inventory form and updates to the Office of Environmental Health & Safety (OEHS), Chemical Safety Manager, Tulane University Health Sciences Center, TW16. Updates must be prepared at least annually and turned in by December 31st of each year in order to meet regulatory reporting requirements. (Electronic reporting is encouraged. Please contact OEHS for details.) Supervisors/principal investigator should keep blank inventory forms on hand and should keep the completed inventory forms in the work area with Hazard Communication records. MSDSs must be available in the work area for all hazardous chemicals listed.

In completing the inventory form, it is very important to list each product separately. Example: Acetone by Fisher, Acetone by Sigma-Aldrich, and Acetone by J.T.Baker are all separate products. The following table coincides with each column on the inventory form and addresses the specific information required.

<table>
<thead>
<tr>
<th>Product or Chemical Name on Label</th>
<th>Name of the hazardous product or chemical. (Example: bleach, paraffin, acetone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(✓) Have MSDS</td>
<td>Check this box if you have a Material Safety Data Sheet (or electronic access to one in the work area) for this product.</td>
</tr>
<tr>
<td>Manufacturer Name</td>
<td>Manufacturer's name (Example: Fisher, Hewlett-Packard, Sigma Chemical Co., J.T. Baker)</td>
</tr>
<tr>
<td>C.A.S. Number (if on label)</td>
<td>Chemical Abstract Services registry number (C.A.S.)</td>
</tr>
<tr>
<td>Product or Catalog Number on Label</td>
<td>Manufacturer's product or catalog number. (Example: 1-Butanol 99.9% HPLC Grade, 27067-9)</td>
</tr>
<tr>
<td>CONTAINER: No. on Hand Size Type</td>
<td>Number of containers of the product in the work area. Container size. (Example: 18 ml, 10 oz, 5 gal, 10 lbs)</td>
</tr>
<tr>
<td></td>
<td>Container type. (Example: glass, plastic, paper bag, etc.)</td>
</tr>
<tr>
<td>Total Amount on Hand</td>
<td>Calculate total amount on hand. (Number Containers x Container Size = Total Amount. Example: 4 bottles x 18ml = 72ml)</td>
</tr>
<tr>
<td>Room Number/Bldg</td>
<td>Room number/building where the inventory item is located</td>
</tr>
</tbody>
</table>
A confined space is an enclosed space that 1) is large enough and so configured that an employee can bodily enter and perform assigned work, 2) has limited or restricted means of entry or exit (e.g., tanks, vaults, pits), AND 3) is not designed for continuous employee occupancy.

**SECTION A**  
*To be completed by the Department.* ORIGINAL must be forwarded to the Office of Environmental Health & Safety (OEHS), Uptown Office; a copy retained by the Department.

<table>
<thead>
<tr>
<th>Department:</th>
<th>Date:</th>
<th>Campus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Contact:</td>
<td></td>
<td>Bldg. Name/No:</td>
</tr>
<tr>
<td>Phone No:</td>
<td></td>
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</tbody>
</table>

Identify CONFINED SPACE by name and location (e.g., sump - basement eq. rm #23):

**SECTION B**  
*To be completed by OEHS.* ORIGINAL to OEHS Uptown Office; COPIES to the Departmental Contact and OEHS Downtown Office.

<table>
<thead>
<tr>
<th>Evaluator:</th>
<th>Evaluation Date:</th>
<th>Permit Required: Yes ___ No ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation Details:</td>
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</table>

Evaluator's Signature: __________________________________________ Date: ____________________________
CONFINED SPACE HAZARD ADDENDUM

Pursuant to the Occupational Safety and Health Administration’s “General Industry Standard (29 CFR 1910.146) Tulane University (Tulane), as host employer, hereby notifies (Contractor), that one or more spaces in which Contractor will be required to perform work under this contract, is a PERMIT-REQUIRED CONFINED SPACE (Permit Space) under Tulane’s exclusive control.

TULANE will:

1. Apprise Contractor of the physical elements of each confined space and any inherent hazards that make the confined space in question a Permit Space, as well as share with the Contractor information gained through previous entry experience.

2. Coordinate entry operations with Contractor when both Tulane and Contractor employees will be working in or near the Permit Space.

3. Debrief Contractor at the conclusion of entry regarding the Permit Space program he/she followed and any hazards encountered or created during his/her entry operations.

CONTRACTOR will:

1. Obtain available information from Tulane regarding the physical elements of the Permit Space and any inherent hazards that make the space in question a Permit Space.

2. Review with Tulane the precautions to be taken to protect Tulane employees, students and third parties against hazards associated with entry and work in the Permit Space.

3. Coordinate entry operations with Tulane when both Tulane and Contractor personnel will be working in or near the Permit Space.

4. Inform Tulane of any hazards encountered or created due to the nature of the operations conducted in the Permit Space either during the period of entry operations or through a post-entry debriefing.

To facilitate the exchange of information, the following persons are designated contacts for Tulane and for Contractor, respectively:

TULANE:

Name
Title
Telephone Number

CONTRACTOR:

Name
Title
Telephone Number
**CONFINED SPACE ENTRY PERMIT**

**SPACE TO BE ENTERED/ BUILDING/ LOCATION:**

**PURPOSE OF ENTRY:**

**AUTHORIZED ENTRANTS:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
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**AUTHORIZED ATTENDANTS:**

<table>
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<th>Name</th>
<th>Signature</th>
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**PERMIT SPACE HAZARDS**

- Corrosives
- Heat Stress
- Electrical Shock
- Mechanical Hazards
- Oxygen Enrichment (>23.5%)
- Oxygen Deficiency (<19.5%)
- Toxic Gases or Vapors (>PEL)
- Flammable Gasses/Vapors (>10%LFL)
- Other:

**EQUIPMENT REQUIRED**

- Forced Air Ventilation:
- Personal Protective:
- Atmospheric Testing/ Monitoring:
- Rescue:
- Other:

**ENTRY PREPARATIONS**

- Atmospheric Test
- Isolation
- Barriers
- Lockout/Tagout
- Inert
- Purge/Clean
- Ventilate
- Other:

**EMERGENCY COMMUNICATION**

- TUHSC POLICE 988-5555
- OEHS 988-5486
- PUBLIC SAFETY 865-5200
- 911

SEE REVERSE SIDE FOR PRE-ENTRY AND POST-ENTRY TEST RESULTS.

**PRE-ENTRY CERTIFICATION**

<table>
<thead>
<tr>
<th>OEHS BY (Print Name):</th>
<th>Signature:</th>
<th>Date: / /</th>
<th>Time: : am / pm</th>
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<tbody>
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**PCST-ENTRY EVALUATION AND COMMENTS**

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## Pre-Entry Test Results

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- O₂ 19.5% but <23.5%
- Flammables <10% LFL
- H₂S <10 ppm
- SO₂ <2 ppm
- CO <35 ppm
- (TOXIC)
- (TOXIC)

OEHS Tester’s Initials

### Location Parameters

A
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## Post-Entry Test Results

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- (TOXIC)
- (TOXIC)

Tester’s Initials

### Location Parameters

A
B
C
D
E
F
G
H
I. BASIC SAFETY PRACTICES

This section outlines safety precautions to be observed by all employees in areas and situations common to most buildings and work environments.

A. General

1. For safety and security purposes, employees should wear their Tulane ID badges at all times.

2. Obey warning signs such as “Wet Floor,” “No Smoking,” “Caution Radiation,” “Caution Biohazard,” and all other safety signs that are prominently placed for your protection.
3. Report potential safety hazards to supervisor personnel immediately.

4. Learn the location of emergency exits and fire extinguishers, and become familiar with the Emergency Action Plan (EAP) for your unit. (A unit is a department, section, center, or program or any number of combination of these components.) Information about the EAP for your unit may be obtained from your supervisor, principal investigator, or the unit's departmental safety representative.

5. Always use a ladder or step stool to reach high objects. Never use a chair, table, or desk.

6. Sharp or pointed objects, such as knives, pens, pencils, scissors, and envelope openers should be handled with care and stored safely. If such items are provided with safety guards or protectors, engage them when item is not in use.

7. Avoid eye injuries by not throwing pens, pencils, paper clips, and rubber bands.

8. Carefully load or clear jammed staplers to avoid pinch or puncture to fingers.

9. Electric fans should not be handled while in operation, and shall not be placed on the floor in locations where they may cause injury to employees. Fans shall have blade guards with openings no larger than one-half inch unless they are mounted higher than seven feet from the floor.

10. Each employee should be aware of the hazards associated with the use of copy machine toners and should observe manufacturer's instructions for safe use and disposal.

11. Hanging plant baskets are not to be attached to suspended ceiling channels unless approved by Facilities Services.

B. Floors, Doors, and Passageways

1. Walk. Do not run.

2. When floors are being waxed or washed, observe signs and proceed cautiously.

3. If water or any other substance is found on the floor, remove it at once or immediately report the spill to housekeeping.

4. Pick up small objects such as rubber bands, paper clips, pencils, etc., that can be the source of trip hazards. Also keep floors and walking surfaces clear and free of trip hazards such as electrical cords, phone lines, torn carpeting, broken tiles, etc.

5. When approaching a hall or passageway hidden by a corner, keep to the right and move slowly to avoid collision with someone coming around the corner.

6. Approach doors with caution and open slowly--someone may be on the other side. Stand clear of exits. When passing through double doors, use door to your right.

7. Consider wearing shoes with broad heels that provide greater stability, especially when negotiating corners.
8. Chairs, footstools, wastebaskets, and other articles are not to be placed in aisles.

9. Telephones, office machines, and other equipment shall be placed so that their cords do not obstruct aisles and passageways.

10. Hallways are to be kept clear to prevent injury during emergency evacuation. Any item left in a hallway for more than 48 hours will be removed at the owner’s expense. Do not obstruct fire or exit doors. Fire doors shall be kept closed except during passage. These doors should not be secured in the open position except by approved devices connected to the fire alarm system.

C. **Stairways**

   1. Never hurry when going either up or down stairs. Proceed deliberately and cautiously. Keep to the right with your hand on the handrail. Do not release the handrail until you have completely ascended or descended the stairs.

   2. Keep your eyes on the steps ahead and refrain from doing anything that distracts your attention such as searching in your handbag for keys, turning your head to talk with a fellow employee, etc.

   3. Keep stairways free from debris. Do not use stairwells or stairway landings for storage. Any item left in a stairwell or stairway for more than 48 hours will be removed at the owner’s expense.

   4. Defective handrails, lighting, and stair treads must be reported to Facilities Services.

D. **Washrooms**

   1. Keep the floor free from water, soap, and from objects that can cause slip and fall injuries.

   2. Trash cans shall not be used for glass, pins, needles, chemicals, or any other articles that may cause a fire or injury to housekeeping personnel.

   3. Do not place drinking glasses, cups, and other items on towel dispensers.

E. **Windows**

   1. Employees shall not lean from windows nor are they to sit on the sill or casing of a window, even when the window is closed.

   2. Articles shall not be placed on windowsills.

   3. No object shall be thrown out of a window.

   4. Cracked window panes shall be immediately reported to Facilities Services.

F. **Desks, Tables, and Cabinets**

   1. Place objects securely on desks and tables to prevent fall or displacement.

   2. When opening desk drawers, exercise care to prevent drawers from falling out.
3. Pull out one file cabinet drawer at a time or uneven weight distribution may cause the cabinet to fall. Distribute materials inside the file cabinet evenly. Do not leave file cabinet drawers pulled out when not in use. Where possible, supply cabinets, file cabinets, and other such equipment that may tilt due to a shift in balance, shall be secured by bolting together to a wall or to the floor.

4. **Do not store materials on top of cabinets or within 18” of sprinkler heads.** Place materials securely in cabinets to prevent the materials from falling out when doors are opened.

5. When a sheet of glass has been used to cover a desk top, counter or cabinet, the edges and corners of the glass shall be rounded and smooth. Broken or chipped glass shall be immediately removed.

6. When seating yourself at a desk, do not assume that the chair is in place. Place your hand on the back or arm of the chair, holding the chair in place as you proceed to sit. Once seated, keep both feet on the floor. Do not sit with one leg folded under you; doing so can impair blood circulation and result in numbness in the folded leg which may cause you to fall should you attempt to stand and walk.

7. Chairs are to be inspected periodically to ensure that there are no broken rollers, missing nuts, bolts, supports, etc. All office furniture shall be kept free of splinters, rough edges, and loose or defective parts. Equipment and furniture needing repair should be reported to your supervisor. Defective furniture shall be repaired or discarded. Office furniture shall not be used as ladders or step stools.

8. Provide the proper space for boxed supplies. Do not leave full or empty boxes in aisles, in offices, or in doorways. Empty boxes shall be stored properly or be removed as soon as possible to prevent tripping and fire hazards. When stacking boxes, be sure each box is placed squarely on top the box under it and that they do not tilt. Do not stack above 4 feet unless the load is secured.

9. When using a cutting blade to open boxes, be careful that the blade does not slip. When not in use, the blade guard must be replaced. If boxes are opened by pulling the flaps, be watchful of staples that may be holding the flaps in place.

G. **Electrical Cords and Outlets**

1. **Use of extension cords or 3-way plugs in lieu of permanent wiring is a violation of building fire codes.** Grounded, heavy gauge extension cords may be used as a **temporary** supply of electrical power for portable equipment, e.g., maintenance power tools, audio visual equipment, housekeeping appliances, etc. When used as such, do not run extension cords through doorways or openings in the ceiling, floor, or walls.

2. Equipment with grounded (3-prong) power cords or double-insulated appliances should be purchased and used wherever possible. Improper use of adapters or “cheaters” for grounded plugs is a violation of building fire codes. Properly grounded adapters may be used in areas that do not have grounded receptacles. Contact OEHS or Facilities Services for more information. In wet areas, electrical outlets shall be provided with ground fault circuit interrupters.
3. Always keep combustible materials away from sources of heat such as light bulbs and electrical appliances. Exposed light bulbs must be properly guarded when located lower than seven feet from the floor.

4. Report defective electrical equipment such as frayed wires, broken plugs, exposed wiring, etc. The defective electrical equipment must be repaired immediately or discarded. Prior to repair, such equipment should be isolated and tagged to prevent use. Do not attempt to tape a broken plug or damaged power cord.

5. Multiple outlet strips that are properly protected with a circuit breaker or fuse may be used for computer configurations; however, the cordset shall be limited to six feet in length.

6. Place equipment near outlets to avoid cords running across floors, aisles, and through doorways. If it is temporarily necessary to have cords in an aisle, tape the cords in place or provide a cord enclosure guard to avoid a trip hazard.

7. Raised outlets (pedestal type) are not to be located in aisles or under desks in the area of foot rests. Unused floor outlets that are flush with the floor must have a protective cover in place at all times.

8. Portable heaters are not to be used unless provided by Facilities Services or Plant Operations.

H. Office Machines and Equipment

1. Some office machines have potentially hazardous parts such as moving belts, rollers, gears, etc., that must be adequately guarded before being placed in service. Normally, guards are installed by the manufacturer as standard equipment; if not, they are to be installed locally before the machine is placed in operation. Do not remove protective guards, open protective hoods, open side doors, or remove side panels from machines while machines are in operation.

2. Electrically operated machines, if not double insulated, are to be equipped with a three-conductor cord and grounded. Do not modify plugs to connect them to an ungrounded circuit.

3. Unplug all electrically operated equipment prior to attempting to: clear a jam, make an adjustment, or alter a malfunctioning part as per manufacturer’s recommendations.

4. Turn printers off when changing cartridges or toner. Also turn off the power when changing ribbons and belts in older printers.

5. Conduct periodic maintenance checks to ensure that hinges and latches that hold protective guards, hoods, doors, and panels in place are in safe working condition. If such guards are found defective, have them repaired immediately.

6. Do not place objects on top of machines. Vibration from a machine during operation may cause the object to fall off and hit someone or fall into the machine and jam it or cause an electrical problem.

7. When maintenance personnel are working on equipment in your area, do not assist in moving the equipment. Engaging in such activity could cause a muscle strain.
8. Turn off electric or heat producing equipment such as automatic coffee pots when not in use. An automatic timer can be used for this purpose.

I. Trash Containers

Trash containers shall be metal or FM/UL approved plastic in areas with automatic sprinklers. Containers located in hallways and exit corridors shall be covered or equipped with a self-extinguishing lid assembly. All trash containers of 20 gallons or greater capacity should be provided with covers. This same requirement applies to all recycling containers unless approval is acquired through OEHS prior to purchase.

J. Lifting and Carrying

1. Whenever possible, use proper tools such as a hand truck or a luggage cart with rollers for assistance. Use the right tool to do the job properly. Estimate the size and weight of a load and your physical ability to handle it. Make certain the load is stacked in a manner that will permit full view once lifted.

2. Position your feet close to the object being lifted and about shoulder width apart for balance.

3. Bend your knees and get a good handhold. Keep your neck in line with the plane of your back.

4. Lift the material smoothly into carrying position. Keep the load close to your body. Do not turn or twist your back.

5. While lifting, avoid twisting motions or awkward positions. Do not over extend or stretch to reach overhead objects.

6. Make certain the path of travel is clear before proceeding.

7. To set the load down, bend your knees and comfortably lower the load using leg and back muscles.
TULANE UNIVERSITY
Office of Environmental
Health & Safety (OEHS)

CUTTING-WELDING
HOT WORK
PERMIT

PRECAUTIONS ON REVERSE SIDE
MUST BE FOLLOWED

Date: ____________________________

Building & Dept: _______________________

Floor & Room No: ________________________

Time Started: ______
Completion Date/Time: ______

Work To Be Done

________________________________________

________________________________________

If Fire Occurs, Phone Security at
and activate the building fire alarm

Foreman: _______________________________

Shop & Dept: ____________________________

Signature of
Responsible Employee: _______________________

copies to: OEHS, Facilities Services, and Security
(Security is “Public Safety” at uptown campus
and “TUHSC Police” for all other campuses).

SEE MANDATORY PRECAUTIONS OTHER SIDE

10F-OEHS /Tulane (Rev. 8/03) Facilities Services

DANGER
PREVENT FIRES

DO NOT CUT, WELD, OR USE OTHER OPEN
FLAME OR SPARK-PRODUCING EQUIPMENT
UNTIL THE FOLLOWING PRECAUTIONS HAVE
BEEN TAKEN:

1. The location where the work is to be done has
been personally examined, and the work to be
done is confined to the area or equipment
specified in this permit.

2. There are no flammable or combustible
materials in the work area. Drums, tanks,
equipment, or other containers in the area
previously containing such materials have been
properly purged.

3. All combustibles have been located 25 feet from
the work area or properly covered with metal
guards or flame retardant covers.

4. Flame or spark-producing equipment to be used
has been inspected, found to be in good repair,
and contains all safety devices.

5. Sprinklers, if provided, are operational and
measures have been taken to ensure the system
will not be shutdown until this work has been
completed.

6. Adequate portable fire extinguishers have been
provided and fire hoses, if available, are
accessible and operational.

7. Floors and surroundings have been swept clean.
Wood floors have been wet down or properly
covered with flame retardant covers.

8. All floor and wall openings within 25 feet of the
work area have been properly covered.

9. A responsible worker has been assigned to
watch for sparks in the area and on the floors
above and below.

10. A copy of this permit has been hand carried to
Security so that a patrol of the area can be
made at least one hour after hot work has been
completed for the day.

DATE AND TIME OF SITE INSPECTION
BY SECURITY:

This form should be printed two-sided on heavy stock and cut to size.
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   B. Ergonomic Awareness
   C. MSD/WMSD Defined

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REFERENCED FORMS

- First Report of Occupational Injury/Illness 18F-OEHS (OEHS version of OSHA Form 301)
- WMSD Hazard Report 20F-OEHS
- Ergonomic Evaluation Report 21F-OEHS

I. ERGONOMICS

A. Definition

The Occupational Safety and Health Administration (OSHA) defines "ergonomics" as the "study of work," and "the science of designing the job to fit the worker, rather than physically forcing the worker's body to fit the job." OSHA ergonomic studies have indicated that workers whose jobs involve such risks as physical force, repetition, awkward or static postures, quick motions,
compression, vibration, and other such activities, performed for a certain duration, at a certain frequency or magnitude, are vulnerable to musculoskeletal disorders (MSD) (injuries to the soft tissues of the body). The same studies found that if these risk factors were eliminated by implementation of new procedures, equipment, or tools, a parallel reduction in injuries would occur.

To address the risk factors identified in the OSHA studies, Tulane’s Office of Environmental Health & Safety (OEHS) has created an Ergonomics Program (EP) that shall be implemented at all Tulane facilities. OSHA ergonomic guidelines and the standards addressed in OSHA’s General Duty Clause requiring that the workplace be kept free of serious hazards, were used in developing this program, which includes, but is not limited to, the following

1. procedures for “reporting” work-related MSD hazards;

2. a means for evaluating the reported hazard (present or potential) by surveying the work site and work tasks being performed therein;

3. controls that can be recommended for the elimination or reduction of work-related MSD hazards;

4. follow up procedures to ensure that controls have been implemented;

5. education and training in ergonomic principles and practices.

B. Ergonomic Awareness

Throughout this manual, various aspects of safety are addressed: safety in using tools and equipment, handling hazardous materials, fire safety, etc. Ergonomics is yet another aspect of safety to be taken into consideration. If a piece of equipment is being purchased for the office, not only does it have to be evaluated on the basis of safety features such as non-flammable materials, adequate enclosure of moving parts, adequate electrical grounding, etc., the equipment must also be looked at from an ergonomic perspective: How frequently will the equipment be used? By whom? Where will it be placed in relation to the worker who will be using it most often?

Ergonomic awareness means observing "what is being done" and the "affect the process is having on those performing the task." Sometimes an ergonomic solution is as simple as elevating a computer screen. At other times, potential hazards have to be discovered by survey and evaluation. Whether simple or complex, however, ergonomic solutions can only be discovered by an ongoing awareness and assessment of tools, tasks, processes, and workstation layouts all of which are changed or are affected by new technologies.

C. MSD/WMSD Defined

“MSD,” is an acronym for “musculoskeletal disorder,” which is defined by OSHA as a disorder of the soft body tissues (muscles, nerves, tendons, ligaments, joints, and cartilage) that often manifests in jobs involving repetitive motions, force, awkward postures, vibration, etc. MSDs that occur in the workplace are referred to as “work-related” MSDs, or WMSD. Eliminating or reducing WMSD hazards is the focal point of the Ergonomics Program outlined here.
II. ERGONOMICS PROGRAM

As outlined above, the Ergonomics Program at Tulane provides 1) procedures for reporting WMSD hazards; 2) a means for evaluating the reported hazard (present or potential) by surveying the work site and work tasks being performed therein; 3) controls that can be recommended for the elimination or reduction of WMSD hazards; 4) follow up procedures to ensure that controls have been implemented; 5) education and training in ergonomic principles and practices; 6) WMSD hazard recordkeeping.

A. Reporting WMSD Injuries/Hazards

1. Injury/Illness Reporting

Any injury or illness occurring in the workplace, whether an WMSD or other injury/illness, must be immediately reported to the injured/ill employee’s supervisor or principle investigator and documented on Form 18F-OEHS, First Report of Occupational Injury/Illness (located in Appendix E of this manual). This same form should be used for reporting WMSD signs or symptoms.

Supervisors/principal investigators are responsible for ensuring that the original report is forwarded to Tulane’s Office of Risk Management with a copy is sent to OEHS.

2. Hazard Reporting

Any employee who becomes aware of an existing or potential WMSD hazard in the workplace shall report same to his/her supervisor/principal investigator. If the supervisor/principal investigator needs further information in order to correct the hazard, he/she should prepare an WMSD Hazard Report (Form 20F-OEHS located in Appendix E of this manual, or at www.som.tulane.edu/oehs) which should be forwarded to OEHS ( may also be phoned in to OEHS). OEHS will contact the supervisor/principal investigator and arrange a date and time for a survey of the work area and/or work tasks where the hazard exists.

If an employee's supervisor/principal investigator fails to follow up on a reported hazard, the employee has a right to follow the unit’s chain of command in seeking remedial action. (A unit is a department, section, center, or program, or any number or combination of these components.) If nothing is done, the employee may by-pass the chain of command by reporting directly to OEHS.
B. **Hazard Evaluation**

1. **Work Site Survey**

   Upon receipt of an WMSD Hazard Report (by phone or in writing), OEHS will log the report and give it a control number for future reference and follow up. OEHS will then contact the supervisor/principal investigator of the unit where the present or potential hazard exists, b) arrange a time and place for a survey of the work area and/or task as it relates to the reported hazard, c) evaluate the information obtained from the survey, and d) make a determination as to whether a present or potential hazard exists.

   If a hazard *does* exist, OEHS shall recommend controls that can be implemented to eliminate or reduce the hazard. Recommendations will be presented on **Form 21F-OEHS, Ergonomic Evaluation Report**, and forwarded to the supervisor/principal investigator of the unit where the hazard is present, with a copy to the employee(s) involved.

   If in the course of a survey, OEHS discovers a problem that can be fixed on-the-spot, the recommended correction shall be offered at that time and simply reiterated in the final evaluation.

2. **Elements of Evaluation**

   The OEHS evaluation to determine the existence (present or potential) of WMSD hazards shall consist of, but not be limited to, the following:

   a. A survey of the work area and work tasks of the affected employee(s).

   b. A survey of work area equipment and accessories, and the overall work area layout.

   c. A summary of an employee(s)'s work task.

   d. An interview of the unit's supervisor/principal investigator.

   e. An interview of the employee(s), which, in addition to questions about work tasks and work area, may include questions regarding the employee's current medical status, the manifestation of symptoms of injury and date of onset of symptoms.

   f. If a medical opinion has been rendered, OEHS may conduct an interview with the employee's health care provider which shall be limited to information on the employee's ability to perform his/her work tasks.

   In gathering information concerning the employee's medical condition, OEHS shall at all times follow procedures for protecting the privacy of medical information and records. Any interview with the employee regarding his/her medical status shall be conducted in private and the information gathered shall be confidential and shall not be released to any other party except the employee or his/her representative. The same applies to any information gathered from the employee's health care provider: the interview shall be conducted in private and any information gathered shall be kept confidential and unavailable to any party other than the employee or his/her representative.
3. **Response Priority**

OEHS's priorities in responding to an WMSD Hazard Report shall be based upon, but not limited to: a) the urgency of the complaint received; b) whether or not a "First Report of Occupational Injury/Illness" has been generated; c) whether or not the hazard affects persons with permanent or temporary disabilities; and d) whether or not opportunities exist for ergonomic input at the design stage for new or renovated areas.

**C. Controls for Hazard Elimination/Reduction**

Following a survey of the work site, OEHS shall evaluate the information gathered during the survey and make a determination as to whether or not an WMSD hazard exists. Results of the evaluation will be sent to the supervisor/principal investigator of the area.

If it is determined that an WMSD hazard is present, OEHS shall make recommendations for controls that can be employed to eliminate or reduce the hazard. The recommendations may cover either or both "engineering controls" and "administrative controls." Implementation of controls lies with the supervisor/principal investigator. OEHS shall request, in the WMSD Hazard Evaluation, that the supervisor/principal investigator supply OEHS with a projected date by which remedial measures shall be implemented.

1. **Engineering Controls**

   Engineering controls shall mean effecting a remedy (to the present or potential hazard) through work station layout, furniture, or equipment. Examples would include provision of fully adjustable chairs with increased back support, glare screens for monitors, ergonomically designed keyboards, etc.

   For purposes of the Ergonomics Program, personal protective equipment may also come under engineering controls. However, OSHA establishes that PPE may only be used alone if other controls are not feasible. In all cases where PPE is required, the unit must provide it at no cost to employees.

   Ergonomic recommendations for use of PPE do not replace but rather supplement OSHA regulations for PPE as outlined in **Section 14, Personal Protective Equipment**, of this manual.

2. **Administrative Controls**

   Administrative controls shall mean effecting a remedy (to the present or potential hazard) through a change in job procedure, job assignment, duration of assignment, or simply educating or training employees in ergonomic principles. Examples of administrative controls would include job or task rotation, short breaks at regular intervals, streamlining procedures, training or retraining in the use of equipment.

**D. Follow Up**

Having received projected dates for the implementation of recommended controls from the supervisor/principal investigator, OEHS shall follow up with the supervisor/principal investigator to determine if implementation was achieved by the projected date.
E. Education and Training

While education (in the form of written material or on line-information on ergonomics) and training may be required as remedial measures following the survey and evaluation of a work area, OEHS, as part of its Ergonomic Program, shall provide annual training for departmental safety representatives and supervisors/principal investigators in ergonomic principles and practices; training that can be passed on to the employees under their supervision.

Training programs cover 1) the requirements of the Ergonomic Program; 2) identifying the signs and symptoms of WMSDs; 3) procedures for reporting WMSD injuries, signs, or symptoms, and present or potential WMSD hazards; 4) how to use engineering and administrative controls to address WMSD hazards, and 5) how to evaluate the effectiveness of controls.

All Tulane personnel should access training and educational materials online at the OEHS website: www.som.tulane.edu/oehs, click on the “ergonomics” icon.

F. Recordkeeping

OEHS and Risk Management shall bear responsibility for recordkeeping associated with the Ergonomics Program. Records to be kept include: 1) WMSD Hazard Reports (by OEHS), 2) WMSD Hazard Report Evaluations (by OEHS), and worker's compensation records (by Risk Management).

OEHS shall retain copies of any First Report of Occupational Injury/Illness forms generated as a result of an WMSD or its signs or symptoms, and any attending documentation including written medical opinions from health care professionals. OEHS shall also maintain records regarding work restrictions and time off of work as a result of an WMSD.

As explained in II.B.2 above, OEHS shall comply with all regulations regarding privacy of personal and/or medical information. Upon request, records shall be available for examination and copying only to the employee, his/her representative, and to OSHA.

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**ERGONOMIC AWARENESS**

means observing "what is being done" and the "affect the process is having on those performing the task.” Sometimes an ergonomic solution is as simple as elevating a computer screen. At other times, potential hazards have to be discovered by survey and evaluation. Whether simple or complex, however, ergonomic solutions can only be discovered by an ongoing awareness and assessment of tools, tasks, processes, and workstation layouts all of which are changed or are affected by new technologies.

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Ergonomics / Page 6 / SECTION 11
III. RESPONSIBILITIES

Responsibilities for the Ergonomic Program shall be distributed as follows:

A. **Risk Management**
   1. Shall work with OEHS in developing ergonomic guidelines and policies.
   2. Ensure that all record keeping requirements are met for worker's compensation claims.

B. **Office of Environmental Health & Safety**
   1. Shall implement basic Ergonomic Program requirements.
   2. Advise Risk Management on ergonomic issues and claims.
   3. Work with Risk Management in developing ergonomic guidelines and policies.
   4. Perform ergonomic surveys and evaluation of work site and tasks in response to WMSD hazard reports.
   5. Prepare evaluations based upon work site surveys, which shall include recommendations to control, eliminate, or reduce WMSD hazards.
   6. Assume all recordkeeping requirements of the Ergonomics Program.
   7. Take responsibility for OSHA recordkeeping of all injury/illness reports.

C. **Departmental Safety Representative**
   1. Attend annual OEHS ergonomic training sessions.
   2. Ensure that supervisors/principal investigators have received OEHS training in ergonomics.
4. Verify that supervisors/principal investigators are following procedures for reporting WMSD hazards.

D. Supervisors/Principal Investigators

1. Ensure that ergonomic policies are clearly communicated and understood by employees.

2. Use an WMSD Hazard Report to promptly notify OEHS when an employee reports an WMSD or WMSD signs and symptoms.

3. Work with OEHS during work site surveys; when hazards are identified, ensure that corrective measures are completed on a timely basis.

4. Encourage employees to work with OEHS during work site surveys.

5. Encourage employees to report WMSDs, WMSD signs, symptoms, and hazards promptly.

E. Employees

1. Report WMSDs or WMSD signs, symptoms or hazards to your supervisors/principal investigators immediately.

2. Preferably, an employee should report an WMSD hazard to his/her supervisor/principal investigator who shall, in turn, prepare an WMSD Hazard Report and submit it to OEHS. However, the employee may submit an WMSD Hazard Report directly to OEHS, especially if the supervisor/principal investigator fails to do so within a reasonable time.

3. If an WMSD injury/illness has occurred or if WMSD signs or symptoms appear, use the "First Report of Occupational Injury/Illness" form for reporting.

4. Participate fully in any surveys of the work area and job tasks conducted by OEHS.

5. Participate in ergonomic training if recommended by OEHS or supervisor/principle investigator.

6. Adhere to ergonomic principles and practices in the workplace.

F. Health Care Professional

In preparing written medical opinions following care of an employee who has been examined with regard to an occupational injury/illness that is WMSD related, the health care professional's (HCP) opinion should include:

1. an assessment of the employee's medical condition as related to physical work activities, risk factors, and WMSD hazards associated with the employee's job;

2. any recommended work restrictions, including, if necessary, time off work to recover, and any follow-up needed;
3. a statement that the HCP has informed the employee of the results of the medical evaluation, the process to be followed to effect recovery, and any medical conditions associated with exposure to physical work activities, risk factors and WMSD hazards in the employee’s job; and

4. a statement that the HCP has informed the employee about work-related or other activities that could impede recovery from the injury.

5. The medical opinion should not reveal specific findings of diagnoses unrelated to occupational exposure.

**MUSCULOSKELETAL DISORDER**

or “MSD,” is defined by OSHA as a disorder of the soft body tissues (muscles, nerves, tendons, ligaments, joints, and cartilage) that often manifests in jobs involving repetitive motions, force, awkward postures, vibration, etc. MSDs that occur in the work place are referred to as “work-related” MSDs, or WMSD. Eliminating or reducing WMSD hazards is the focal point of the Ergonomics Program outlined here.

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**IV. General Ergonomic Guidelines**

A. Workstations for Desktop Computer Users

1. Chair
2. Monitor
3. Keyboard and Mouse
4. Lighting
5. Telephone
6. Calculator

B. Workstations for Full-Time, Occasional, and Mobile Laptop Computer Users

C. Laboratory Ergonomics

D. Hand Tools

E. Housekeeping

F. Manual Handling/Lifting

---

**IV. GENERAL ERGONOMIC GUIDELINES**

OEHS has collected and analyzed a considerable amount of information on work place ergonomics. To ensure that funds are spent on items ergonomically suited to the specific needs and workstations of department employees, it is recommended that OEHS be contacted before tools, equipment, furniture, etc., are purchased. OEHS should also be contacted before decisions are made regarding work station layout or design. Facilities Services should be contacted for installing large pieces of equipment or
furniture, especially when assembly is required. Employees should not take on this task themselves.

As part of the Ergonomics Program, the OEHS website goes into greater detail about ergonomic considerations in purchasing equipment and setting up ergonomically friendly workstations. See, [www.som.tulane.edu/oehs/Ergo.htm](http://www.som.tulane.edu/oehs/Ergo.htm).

THE ERGONOMIC WORK STATION

A. Workstations for Desktop Computer Users

1. Chair

   The chair must be fully adjustable from a seated position. The lumbar or lower back area should be properly supported; the support should fit the curve of the lower back. The chair should have armrest support (a foot rest is suggested and for some employees a foot rest may be necessary). Employees should be instructed in using the chair’s operating controls so that adjustments may be made tailored to an employee’s needs. *(See, illustration above)*

2. Monitor

   The monitor should be raised so that the top of the viewing screen is at or below eye level, and approximately 18 to 24 inches from worker’s face, with a 10 to 20 degree tilt back, unless the angle causes additional glare. An anti-glare filter over the viewing screen should aid in reducing serious glare problems caused by direct or indirect light sources. A document holder should be placed at the same distance and height as the monitor. *(See, illustration above)*

3. Keyboard and Mouse

   The keyboard should be aligned with the monitor. During use, arms should be at an angle of 80 to 100 degrees, with the upper arm almost vertical. The keyboard should be approximately at elbow height, but no higher than 2 ½ inches above the work surface. An ergonomic mouse should be placed to the right or the left and at the same height as the keyboard. *(See, illustration above)*

Ergonomics / Page 10 / SECTION 11
4. **Lighting**

If computer work is the employee’s primary task, consider lowering general room lighting level and use properly placed task lighting. Position the work area so that light sources, such as windows, are perpendicular to the monitor rather than directly behind or facing the monitor. If necessary, use shades or blinds to reduce the intensity of direct sunlight.

5. **Telephone**

As a rule, to minimize neck strain, employees whose jobs require heavy phone usage should be supplied and encouraged to use headsets; all other employees whose jobs require phone use should be issued shoulder rests. Note that headsets should be selected by the employee, who will be using them. Employees should then be instructed on how to properly operate and adjust the headsets they have selected.

6. **Calculator**

Heavy users of calculators should lower the calculator to the same level as the keyboard. Use a positive or negative slope wrist rest pad. Suggest employee try each to see which is more suitable for his/her needs. The pad will also soften the impact from finger strokes.

**B. Workstations for Full-Time, Occasional, and Mobile Laptop Computer Users**

Although the workstation set up for laptop users is basically the same as that for desktop users, certain adjustments **MUST** be made. All laptop users should consult the OEHS ergonomics website at [www.som.tulane.edu/oehs/Ergo.htm/Recommendations for Laptop Workstations](http://www.som.tulane.edu/oehs/Ergo.htm/Recommendations for Laptop Workstations).

**C. Laboratory Ergonomics**

Research exposes laboratory personnel to a number of risk factors, including WMSD hazards. Laboratory personnel are therefore encouraged to review the OEHS website at [www.som.tulane.edu/oehs/Ergo.htm/Laboratory Ergonomics](http://www.som.tulane.edu/oehs/Ergo.htm/Laboratory Ergonomics) for a “checklist” of ergonomic concerns relevant to lab work and the lab environment. This checklist is adapted from checklists made available by the Centers for Disease Control and the National Institute of Environmental Health Sciences and has been modified for Tulane’s use.

Employees interested in reviewing CDC and NIEHS checklists may do so at the following websites. Please note, however, that the information on these sites does not necessarily reflect the ergonomic policies and procedures in place at Tulane University.

- Centers for Disease Control website: [http://www.cdc.gov/od/ohs/Ergonomics/labergo.htm](http://www.cdc.gov/od/ohs/Ergonomics/labergo.htm)
- National Institute of Environmental Health & Safety:

**D. Hand Tools**

Improper use or poorly designed hand tools may result in hand and/or arm injuries. Hand tools should therefore be carefully selected with both safety features and ergonomic impact in mind. *(See also, Section 24, Facilities Services,* of this manual for further information on use of tools.)
1. Select tools a) suited to the task (e.g., a curved handled pliers for use on a vertical surface); b) designed to minimize vibration at the handle and to minimize the weight of the tool (except those used for striking); c) supported by a handle near the center of gravity; d) held by a handle of the proper thickness, length, and shape (i.e., allowing four fingers to go around the handle and overlap with the thumb); e) that have a slip resistant handles and that the span between two handles squeezed together is less than 4 inches (100 mm); f) operated with more than one finger on the trigger and with a minimum amount of force.

2. Maintain tools regularly and repair or replace if broken.

3. Use tools in combination with a fixture (e.g., a clamp) that holds the object(s) being worked on.

4. Workstation layout a) should be a place to hold tools and offer support for heavy tools, such as a counterbalance or support arm; b) should provide support for the worker's arms during precision hand work; c) should hold or suspend cords and hoses so that the worker does not carry the extra weight while doing the task; d) should be arranged so that cords or hoses do not interfere with the tools movements

E. Housekeeping

Risk factors in housekeeping tasks may result in injuries to the shoulder, back, and/or knees. (See also, Section 23. Custodial Safety, of this manual for further housekeeping guidelines) Housekeeping employees should:

1. Use tools that provide long-handles for duties requiring leaning over and bending (cleaning tubs and toilets), and for reaching above head heights (dusting surfaces and high ceilings).

2. A "team" of workers should be engaged where heavy lifting tasks are required.

3. Use easy-to-move carts. "Supply carts" should have appropriate size and type of wheels, such as hard rubber or pneumatic wheels. Powered carts should be used for long distances. Carts with vertical handles are better for accommodating differing heights of housekeeping staff.

4. Store supplies on shelves located between knee height and shoulder height. Store frequently used and heavy items at waist level so they can be reached without excessive bending and twisting.

F. Manual Handling/Lifting

Manual handling/lifting must be done by methods that ensure the safety of both the employee and the material. Employees whose work assignments require manual handling and lifting should have a basic knowledge of the anatomy and function of the spinal cord, and must be trained in lifting techniques designed to avoid back injury. (See also, Section 10. Basic Safety, Section 24. Facilities Services; and Section 31. Office Safety, of this manual for further information on lifting/carrying)
PERSONAL PROTECTIVE EQUIPMENT ASSESSMENT

This assessment form shall be used to assess the hazards to which employees may be exposed to determine whether there are hazards in the environment that necessitate the use of personal protective equipment. Departments and Administrative Units are responsible for completing and submitting this form to the Office of Environmental Health and Safety. (A separate assessment form must be completed for each work area).

Person(s) Conducting the Assessment: ________________________________________

Department: ____________________________ Phone No/Ext: ________________________

e-Mail: ___________________________________________________________ Mail Code: ________________________

Location of Area to Be Assessed:

Campus: ____________________________ Building: ____________________________ Room No: ____________
(Campus: e.g., Uptown, TUHSC, Primate, etc.)

Date of Assessment: _____ / _____ / _____

CHEMICAL OR INFECTIOUS HAZARDS

1. Are hazardous chemicals or infectious materials used in this work area? ___Yes___No

2. What types of hazardous chemicals or materials are used? (Check all that apply.)
   ___Corrosives ___Flammables ___Toxics ___Oxidizers ___Biohazards
   ___Carcinogens (please list)_______________________________
   ___Explosives ___Radioactive Materials ___Infectious Agents
   ___ Other(s) (please list)_________________________________

3. What personal protective equipment is recommended for use with these materials?
   (See Material Safety Data Sheets or other sources of information) (Check all that apply.)
   ___Gloves ___Chemical Apron ___Respirator ___Goggles ___Lab coat ___Safety Glasses
   ___Face Shield ___Shoe Covers ___Other(s) ________________________________

HARMFUL DUST

1. Are there sources of harmful dust to which employees may be exposed (such as from blasting, buffing, woodworking, mixing of concrete and/or glazes for art, etc.) in this work area? ___Yes___No

2. What personal protective equipment is recommended (see Material Safety Data Sheets or other sources of information)? (Check all that apply.)
   ___Gloves ___Dust/Mist Respirator ___Safety Glasses ___Goggles ___Face Shield
   ___Other(s) ________________________________________________

COMPRESSION

1. Are there activities in which employees may encounter compression hazards such as from hydraulic jacks, tools, presses, or compactors in this work area? ___Yes___No

2. Are forklifts used in this work area? ___Yes___No

3. Do employees install or work with heavy pipes in this work area? ___Yes___No

4. Are there objects in the work area that may roll over an employee's feet? ___Yes___No

5. What personal protective equipment is recommended?
   ___Gloves ___Foot Protection ___Hard Hat ___Other(s) ________________________________
IMPACT

1. Are there sources of motion which expose employees to impact hazards such as chipping, grinding, masonry work, woodworking, sawing, drilling, chiseling, power fastening, riveting, sanding, etc. in this work area? ___Yes___No

2. Do employees work around/under conveyor belts that carry equipment or machinery? ___Yes___No

3. Is there a possibility of an employee being struck by a falling object? ___Yes___No

4. What personal protective equipment is recommended?
   ___Gloves ___Foot Protection ___Hard Hat
   ___Safety Glasses with side shields
   ___Goggles ___Face Shield ___Other(s) ______________________________

PENETRATION

1. Are employees exposed to any sources of penetration such as needles, pipettes, syringes, sharp objects, etc.? ___Yes___No

2. Do employees perform any activities where there is a chance of the hands getting cut? ___Yes___No

3. Are there any scrap metals, nails, wires, screws, tacks, or large staples being used by an employee? ___Yes___No

4. Is there any area where an employee walks where sharp objects may pierce the feet? ___Yes___No

5. What personal protective equipment is recommended?
   ___Gloves ___Safety glasses ___Goggles ___Foot Protection
   ___Face Shield ___Other(s) ______________________________

HEAT

1. Are there any sources of high temperature in the work area such as boilers, furnace operations, glass making, cutting, welding, or casting? ___Yes___No

2. Are there any sources of extreme cold temperatures in the work area such as cryogenic gases, dry ice, etc.? ___Yes___No

3. What personal protective equipment is recommended?
   ___Gloves ___Face Shields ___Safety Glasses ___Goggles
   ___Other(s) ______________________________
LIGHT/RADIATION

1. Are there any activities performed in areas where high intensity light exists such as arc welding, torch blazing, UV light, infrared spectrometry, or x-rays? ___Yes___No

2. Are lasers used in the work area? ___Yes___No

3. Are heating operations performed? ___Yes___No

4. Is there excess solar glare? ___Yes___No

5. What personal protective equipment is recommended?
   ___Filter Lenses ___Goggles ___Face Shield ___Welding Helmet ___Other(s) ______________________

OTHER CONSIDERATIONS

1. Do any employees wear contact lenses? ___Yes___No

2. Do any employees wear prescription eyewear? ___Yes___No

3. Are any employees allergic or sensitive to certain materials, such as powdered gloves? ___Yes___No  If “yes,” list materials:

COMMENTS (Use this space for comments and/or for assessing special research chemicals and/or procedures.)

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

● Upon completion of this assessment, use reverse side of this page to 1) review the PPE policy, 2) sign the Certification, and 3) obtain the signature of the department (or administrative unit) head on the Acknowledgment.
PERSONAL PROTECTIVE EQUIPMENT POLICY

If assessment indicates that an employee’s exposure warrants the use of personal protective equipment (PPE), PPE policy requires that:

1. the PPE be selected to protect the employee from the identified hazards;
2. the PPE must fit properly;
3. damaged or defective PPE must not be used;
4. the cost of implementation and maintenance of PPE shall be the responsibility of the department or administrative unit;
5. the employee must be trained to know: a) when PPE is necessary, b) what PPE the situation requires; c) how to properly don, doff, adjust and wear the PPE, d) the limitations of the PPE, and e) proper care, maintenance, useful life, and disposal of PPE;
6. the employee must demonstrate an understanding of the training before he/she is allowed to perform work requiring the use of PPE;
7. all training must be documented (name of employee trained, date, subject, person who performed training);
8. retraining shall be required a) if changes occur in the workplace rendering previous training obsolete, b) if there are changes in the PPE to be used, or c) if the employee shows that he/she has not retrained the requisite understanding or skill in order to properly use the PPE assigned; and
9. Departments or Administrative Units must bear the responsibility for training.

CERTIFICATION

I, ________________________________ (print name of person who conducted this assessment), certify that the foregoing assessment is complete to the best of my knowledge.

Signature: ________________________________ Date: ____________________

ACKNOWLEDGMENT

I, ________________________________ (print name of department or administrative unit head), hereby acknowledge that I have reviewed the foregoing assessment, and, in accordance with the Personal Protective Equipment Policy, I will ensure that:

1. the appropriate PPE is available and maintained in good condition for the employees in my department; and that
2. all affected employees have been trained to know: a) the type of PPE required for performing hazardous tasks, b) the limitations of the PPE, including care, maintenance and useful life, and c) how to properly wear and adjust the PPE required for the task.

Signature: ________________________________ Date: ____________________
## BUILDING (General) Health & Safety Inspection Report

**Instructions:** Checklist items should be circled “Y” for Yes, “N” for No, or “N/A” for Not Applicable. For every item circled “N” (No), provide the “Corrective Action.” Once corrected, provide date correction completed.

- Items not listed in this report may be included under Item V “Additional Notes” at the end of this form.

**Distribution:** On completion of the INSPECTION, the inspection report should be signed, the original retained by the department, and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The DSR will take responsibility for forwarding the copy to the Office of Environmental Health & Safety.

---

**INSPECTION CONDUCTED BY:** (print): 
**Phone:** 
**E-mail:** 
**Campus:** 
**Building:** 
**Dept:** 
**Floor/Rm Nos:** 

**Date of Inspection:** 

---

### CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>MEANS OF EGRESS</th>
<th>FIRE PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stair treads are in good condition</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2.</td>
<td>Stair handrails are in good condition</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>3.</td>
<td>Corridors are free of obstructions</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>4.</td>
<td>Fire doors swing in direction of travel/exit</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>5.</td>
<td>Panic hardware is affixed to door(s) and is in workable condition</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>6.</td>
<td>Doors are not wedged open</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>7.</td>
<td>Hall lighting is adequate (bulbs or tubes are not broken or burned out)</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>8.</td>
<td>Exits are properly marked, illuminated and unobstructed</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>9.</td>
<td>Emergency lighting system is available and in working order</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>1.</td>
<td>Fire extinguishers can be reached within a 75 feet travel distance</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2.</td>
<td>Extinguishers are checked monthly and inspected annually by licensed technicians</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>3.</td>
<td>Extinguishers are hydrostatically tested according to code</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>4.</td>
<td>Fire hoses available and in good repair (no more than 20 years old)</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>5.</td>
<td>Adjustable fog type nozzles are provided for fire hoses</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>6.</td>
<td>Non-combustible approved trash containers are used in this building</td>
<td>Y N N/A</td>
</tr>
</tbody>
</table>

---

12F-OEHS/Tulane (Rev. 8/03) Inspection & Compliance
II. **Fire Protection (cont’d)**

7. Fire alarm system provided, operable, inspected annually by licensed technicians  
   Y N N/A

8. Standpipe(s) provided and operable  
   Y N N/A

9. Fire evacuation plan is posted  
   Y N N/A

III. **Electrical**

1. Overcurrent protection is in good condition  
   Y N N/A

2. Indications are that wiring is in good condition  
   Y N N/A

3. Use of extension cords is prohibited  
   Y N N/A

4. Unauthorized appliances are prohibited  
   Y N N/A

5. Electrical panel boxes are secured and labeled as to power rating and type service  
   Y N N/A

6. Electrical adapters are prohibited  
   Y N N/A

7. Portable multiple outlet strips with circuit breaker protection are used only for computer equipment  
   Y N N/A

IV. **General**

1. Sidewalks and parking areas are in good condition  
   Y N N/A

2. Building floors are level and in good repair  
   Y N N/A

3. Floor and doormats are in good repair  
   Y N N/A

4. Emergency phone numbers are prominently posted (Security)  
   Y N N/A

5. Housekeeping at time of inspection is adequate  
   Y N N/A

6. The building is free from gasoline and other flammables  
   Y N N/A

7. There are sufficient numbers of approved trash receptacles provided  
   Y N N/A

8. Toilet facilities and water fountains are clean and in good repair  
   Y N N/A

9. Toilet room doors are self-closing  
   Y N N/A

10. Soap, water and sanitary towels are provided  
    Y N N/A

11. Employee lockers are clean and in good repair  
    Y N N/A
### IV. General (cont’d)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Accumulation of trash and debris is absent</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>13.</td>
<td>Elevator emergency instructions are posted</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>14.</td>
<td>Elevators are in good repair and have (within 1 year) inspection certificates</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>15.</td>
<td>Emergency access to all areas of building is immediately available</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>16.</td>
<td>All hazardous operations in the building are properly identified (warning signs, etc)</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>17.</td>
<td>Lighting around building and in parking areas is adequate</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### V. Additional Notes

The person conducted the inspection, as indicated on the front page of this report, should provide his/her signature below.

__________________________  ____________________________  
SIGNATURE OF INSPECTOR

**NOTE:**

Please remember that inspection reports are to be submitted QUARTERLY to the Departmental Safety Representative (DSR) in charge of the area. The DSR will then forward the report to the Office of Environmental Health & Safety.
SECTION 12
HAZARD COMMUNICATION

TULANE UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY POLICIES AND PROCEDURES MANUAL
REVISION DATE: 9/1/03

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   E. Compliance Requirements for Grant Proposal Certification

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FORMS REFERENCED

Hazardous Chemicals Inventory 06F-OEHS
Hazard Communication Addendum 05F-OEHS

Hazard Communication / Page 20 / SECTION 12
I. HAZARD COMMUNICATION PLAN

Research, teaching, health care, maintenance, and other essential activities frequently require the use of potentially hazardous chemicals. Employees working with hazardous chemicals need to know 1) the identity of the chemicals, 2) the associated hazards, and 3) how to protect themselves.

The Hazard Communication Plan set forth in this manual, fulfilling the Occupational Safety and Health Administration’s (OSHA) requirement for a “written” hazard communication plan, is designed to address the needs of employees working with hazardous chemicals, as well as to comply with OSHA standards, the Environmental Protection Agency’s (EPA) community "Right to Know" standards (promulgated in the Superfund Amendments and Reauthorization Act (SARA) of 1986), and with Louisiana Hazardous Materials Information Development, Preparedness and Response Act 347.

It should be noted that under the OSHA Hazard Communication Standard, if a worker only encounters chemicals in non-routine, isolated instances, and is not exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies, the worker is exempt from requirements of the Hazard Communication Standard and this written Hazard Communication Plan. The department's supervisory personnel shall make the determination as to whether or not workers are exempt under the standard. If the department needs assistance in making that determination, the supervisor/principal investigator should contact the Office of Environmental Health & Safety (OEHS) for assistance.

A. Scope

The Hazard Communication Plan (HCP) set forth herein, covers the following: 1) hazardous chemical container labeling policy; 2) material safety data sheet (MSDS) policy; 3) information and training curriculum for handling hazardous materials; 4) procedures for maintaining an inventory of hazardous chemicals known to be present at the University; 5) means used to inform employees of the hazards of non-routine tasks; 6) the hazards associated with chemicals in unlabeled pipes; and 7) the method of informing contractors of hazards to which their employees may be exposed.

B. Availability

The HCP set forth in this manual is available to employees, their designated representatives and any other parties, including contractors, having a need to view it. As part of this manual, the plan is widely distributed throughout the University. Copies of the HCP separate from this manual are available upon request from OEHS. On line, the HCP is available at www.som.tulane.edu/oehs. For access to the document, one may also contact Security.
C. Responsibility

It is the responsibility of all University employees to comply with the requirements of the HCP. Failure to comply may result in substantial fines and penalties for the University and for the unit in violation. (A unit is a department, section, center, or program or any number or configuration of these components.)

Supervisors/principal investigators must inventory their areas for potentially hazardous chemicals, and must ensure that employees entering the areas under their supervision are provided the information and training required.

Employees must be alert to the potential hazards of all materials in their work areas by consulting labels, MSDS’s, and by following standard operating procedures designed to protect their health and the work environment.

D. Compliance

Departmental Safety Representatives (DSR) help to ensure that the units they represent that handle hazardous materials are in compliance with the Hazard Communication Plan outlined in this section of the policies and procedures manual. DSRs collect and submit to OEHS required documentation such as inspection reports, training documentation, chemical inventories, etc., prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit’s non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and, if necessary, take the issue of the non-compliant unit to the University’s Environmental Health & Safety Operations Committee for resolution.

- See Section 2, Environmental Health & Safety, of this manual for information on the University’s Compliance Management System.

E. Compliance Requirements for Grant Proposal Certification

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handling Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.
II. HAZARD DETERMINATION

A. Manufacturer/Importer Evaluation

Chemical manufacturers/importers are required to evaluate the chemicals/mixtures they produce or import to determine if these chemicals/mixtures are hazardous. Tulane shall rely on the evaluations performed by the manufacturer/importer. The following sources are used by manufacturers/importers in evaluating the hazards of their products.


2. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment published by the American Conference of Governmental Industrial Hygienists (ACGIH)

3. Annual Report on Carcinogens published by the National Toxicology Program (NTP)

4. Monographs published by the International Agency for Research on Cancer (IARC)


6. Any human epidemiological study, individual case report or animal toxicological testing which indicates that a material presents a health hazard, provided that the study indicates an adverse health effect that is likely to occur, that the results are statistically significant, and that the study was conducted in accordance with scientific principles.

B. Material Safety Data Sheets

If a chemical is determined to be hazardous, the manufacturer or distributor must document the results of the chemical evaluation on a Material Safety Data Sheet (MSDS) that meets OSHA information requirements: identity, manufacturer information, physical and chemical characteristics, physical hazards, health hazards, routes of entry, exposure limits, carcinogenicity, precautions for safe handling and use, control measures, emergency and first aid procedures, and preparation date. If any of the required information is missing, the evaluation shall be deemed inadequate and OEHS shall undertake measures to obtain an acceptable MSDS from the manufacturer or distributor.

If an acceptable MSDS is not obtained, use of the product shall be discontinued at Tulane. OEHS shall inform the purchaser, as well as the Purchasing Department, to discontinue use and further
orders of the product. All units shall be notified that purchase orders, as well as standing orders, for this product will not be processed.

C. Objections to Use of Manufacturer/Importer Chemical Evaluation

If a Tulane employee chooses not to rely on the chemical evaluation provided by the manufacturer or importer, that employee must contact OEHS in writing, stating his/her objections to the manufacturer's or importer's determination, and the methods and/or sources the employee intends to use in evaluating the chemical. Approval of written individual hazard determinations shall be issued by OEHS only after review of both the employee’s objections to the manufacturer/importer evaluation and the employee’s alternative methods of evaluation, and consultation with persons responsible for the affected area.

III. HAZARDOUS CHEMICALS INVENTORY

Every hazardous chemical or material known to be present in a work area MUST be listed as part of the University’s "Hazardous Chemicals Inventory" (HCI) unless the material is exempt. (See, III.B. Exempt Materials, below.) The master HCI shall be used for federal, state, and local community right-to-know reporting and for emergency response operations.

A. Factors and Requirements for Inventory Preparation

1. OEHS is responsible for providing University personnel with appropriate inventory forms and directions for listing information to effect compliance with this policy. (See, Form 06F-OEHS, Hazardous Chemicals Inventory, in Appendix E at the back of this manual.)

2. OEHS requires that the HCI for each location where hazardous chemicals are used, stored, or handled, shall be annually updated by supervisors/principal investigators. If a new chemical posing an extreme hazard is added during the year, or a significant quantity of a hazardous chemical is added to the inventory during the year, more frequent updating may be required. Contact OEHS with this type of additional information or with questions. All updates of the hazardous chemicals inventory for an area must be received by OEHS by April for laboratories and October for non-laboratories to allow time for preparation of regulatory reports. Inventories and updates may be submitted to OEHS electronically.

3. OEHS shall maintain a “master” inventory of hazardous chemicals as well as an MSDS for each chemical listed.

4. The identity of any substance appearing on the HCI shall be the same name that appears on the manufacturer's label, in-house label, and the MSDS for that substance.
5. Each work area must keep a current copy of its specific HCI and have ready access to an MSDS for each listed chemical.

6. OEHS shall forward copies of the University’s master HCI for each campus to Security at TUHSC and the Uptown campus, and to the TNPRC administration at the Primate Center. To view electronically or to obtain a copy of the current inventory on file for a specific area, contact OEHS.

B. Exempt Materials

The following materials are exempt from the Hazard Communication Standard and need not be included on the HCI:

1. Hazardous waste, as defined by the Solid Waste Disposal Act and the Resource Conservation and Recovery Act and regulated by the EPA;

2. Any hazardous substance defined by the Comprehensive Environmental Response, Compensation, and Liability Act and regulated by the EPA;

3. Tobacco and tobacco products;

4. Wood and wood products, including lumber that will not be processed, where the chemical manufacturer can establish that the only hazard the materials pose to employees is the potential for flammability or combustibility. Wood or wood products that have been treated with a hazardous chemical are covered by this standard, and wood that may be subsequently sawed or cut, generating dust, is not exempted;

5. Articles (any manufactured item other than a fluid or particle that is formed to a specific shape or design during manufacture) that have end use functions dependent in whole or in part upon their shape or design during end use, and that under normal conditions of use do not release more than very small quantities (minute or trace amounts) of a hazardous chemical and do not pose a physical or health risk to employees;

6. Food or alcoholic beverages sold, used, or prepared in a retail establishment and foods intended for personal consumption by employees while in the workplace;

7. Any drug defined in the federal Food, Drug, and Cosmetic Act when it is in solid form for direct administration to a patient (e.g., tablets or pills), drugs that are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs), and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);

8. Cosmetics that are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;

9. Any consumer product or hazardous substance defined in the Consumer Product Safety Act and federal Hazardous Substances Act that is used in the workplace for the purpose intended by the chemical manufacturer, and for which the duration and frequency of exposure are not greater than that experienced by consumers when the product or substance is used for purposes intended;
10. Nuisance particulates where the chemical manufacturer can establish that they do not pose any physical or health hazard;

11. Ionizing and nonionizing radiation;

12. Biological hazards.

IV. LABELING

A. Policy

1. Hazardous chemicals (other than those exempted from the standard as listed in III.B above, or exempted from labeling requirements as stated in IV.F below) shall not be accepted for use in the University or shipped to any location unless labeled with at least the following information: a) identity of the hazardous chemical(s); b) appropriate hazard warning; and c) name and address of the chemical manufacturer, importer or other responsible party.

2. Hazardous chemicals other than those exempted in III.B above, or exempted from labeling requirements as outlined in IV.F below, shall not be used in the work area unless labeled with at least the following information: a) identity of the hazardous chemical(s), and b) appropriate hazard warnings.

3. All labels shall be in English, legible, and prominently displayed on the container.

4. If the hazardous chemical is regulated by OSHA in a substance-specific health standard (example: formaldehyde, benzene), then the label used must be in accordance with the requirements of that standard. OEHS may be contacted for a current list of these substances.

5. In certain situations involving individual stationary process containers, the label may be replaced by a sign, placard, or other means to convey the identity of the hazardous chemical and the appropriate hazard warning. If these other forms of warning are used, they must be readily accessible to employees in their work area throughout each work shift.

B. Portable Containers

1. Labels need not be placed on portable containers into which hazardous chemicals are transferred from manufacturer labeled containers, and which are intended only for the immediate use of the
employee who performs the transfer. However, labeling the portable container appropriately can help prevent the accidental misuse of the material by others and is therefore encouraged.

2. Any portable container of hazardous chemicals not intended for immediate use must be labeled with an appropriate in-house label containing the information specified in IV.A.2 above. Samples of in-house labels may be obtained from OEHS.

3. Employees with questions concerning the appropriate in-house label to use when transferring a hazardous material from one container to another container, or who have any questions regarding the information found on a label, should contact the work area supervisor/principal investigator immediately.

4. Supervisory personnel and employees labeling portable containers are jointly responsible for reviewing in-house labels to ensure that the label information is accurate and for determining whether the label conveys the appropriate hazard warnings. OEHS is available to answer any questions that may arise during the course of this review.

5. MSDSs and original container labels should be consulted for hazard information when preparing in-house labeling for portable containers. Abbreviations and acronyms should be avoided.

C. Pipes/Piping Systems

Labels need not be placed on pipes or piping systems. However, any chemical hazards associated with an unlabeled pipe/piping system must be communicated to employees who work in the area containing the pipe/piping system. This is the responsibility of the person or unit maintaining or using the pipe/piping system.

D. Defacing/Removing Labels

A label is not to be defaced or removed unless the container is immediately re-labeled with new information (in compliance with labeling requirements), or unless the container is empty. No employee shall remove any label unless specifically directed to do so by his/her supervisor/principal investigator. Any non-empty container without a label, other than portable containers for immediate use, shall be reported immediately to the work area supervisor/principal investigator. Labels that are hard to read or are coming off of a chemical container must be replaced with an in-house label meeting the requirements in IV.A.2 above.

E. Consistent Name Identification

The name used on the Hazardous Chemicals Inventory to identify a chemical must be the same as that used on the MSDS, the manufacturers label, and the in-house label for the chemical.

F. Exemptions from Labeling Requirements of the OSHA Hazard Communication Standard

The following are exempt from the labeling requirements of the OSHA Hazard Communication Standard:

1. Any pesticide defined in the federal Insecticide, Fungicide, and Rodenticide Act when subject to the labeling requirements of that act and labeling regulations issued under that act by the EPA.
2. Any chemical substance or mixture defined in the Toxic Substances Control Act when subject to the labeling requirements of that act and the labeling regulations issued under that act by the EPA.

3. Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials used as ingredients in such products (e.g., flavors and fragrances) defined in the federal Food, Drug, and Cosmetic Act or the Virus-Serum-Toxin Act of 1913 and regulated and subject to the labeling requirements under those acts by either the Food and Drug Administration or the Department of Agriculture.

4. Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use defined in the Federal Alcohol Administration Act and regulated and subject to the labeling requirements of that act by the Bureau of Alcohol, Tobacco, and Firearms.

5. Any consumer product or hazardous substance defined in the Consumer Product Safety Act and Federal Hazardous Substances Act when subject to a consumer product safety standard or labeling requirements of those acts or regulations issued under those acts and regulated by the Consumer Product Safety Commission.

6. Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act and regulated by the U.S. Department of Agriculture.

G. Adding New Information to Labels

Whenever significant new information regarding the hazards of a chemical becomes available that would entail a change in the hazard warning component of the label, the new information must be added to manufacturer labels and in-house labels within three months and must be contained on the label of all future shipments. Supervisory personnel shall be responsible for ensuring that the new information is added to all applicable labels. OEHS shall alert deans, directors, and unit heads whenever it becomes aware of such changes.
V. MATERIAL SAFETY DATA SHEETS

A. Policy

1. A master file of Material Safety Data Sheets (MSDSs) containing the information required by the OSHA Hazard Communication Standard shall be kept by OEHS for each substance listed on the University’s master Hazardous Chemicals Inventory (HCI).

2. No hazardous chemical is to be used without the corresponding MSDS available in the work area. Units must not accept any hazardous chemical unless at least one of the following conditions is met: a) a Material Safety Data Sheet is provided with it, b) OEHS has been contacted to obtain the MSDS, c) the MSDS is available by electronic means in the work area, or d) the MSDS is already on file in the work area.

3. Supervisory personnel and other users shall be responsible for maintaining an MSDS for each hazardous chemical found/used in their respective work areas. It is recommended that paper copies of MSDSs be kept in the work area, but electronic systems are also permitted. If MSDSs are kept on an electronic system in the work area, the electronic system must be capable of providing a hard copy of the MSDS without unreasonable delay, and all employees must be adequately trained by their supervisor/principal investigator to use the electronic system. In case of temporary power or equipment failure or other emergency, OEHS should be contacted to obtain MSDSs from the master file.

4. The MSDS shall be the most current sheet supplied by the chemical manufacturer, importer, or distributor, or University employee evaluating the chemical hazard. In the event that a hazardous chemical is listed on the HCI and an MSDS is not received from the manufacturer, OEHS shall contact the manufacturer to obtain the MSDS.

5. Purchasing must forward to OEHS a copy of any MSDS and any other safety and/or health information received with incoming shipments of hazardous chemicals. When indicated, OEHS shall send a copy of the MSDS to the employee or supervisor who ordered the chemical.

6. If supervisory personnel or others receive a new hazardous chemical for which they do not have an MSDS in their work area, they shall contact OEHS immediately to obtain a copy. The new chemical must be added to the annual update of the HCI for the area and OEHS must be notified of this change.

7. If new and significant health information comes to light about any hazardous material on the inventory, a revised Material Safety Data Sheet shall be placed in the MSDS master file, and the employees who handle or might be exposed to the material shall be notified of any changes in
work procedures or personal protective equipment. This information shall also be posted on the OEHS web page.

B. Availability

MSDSs shall be readily accessible to any employee at any time. Besides MSDSs maintained by supervisors/principal investigators in the work area, MSDSs may also be obtained or accessed as follows:

1. Hard copy:

Contact OEHS and specify the MSDS needed; OEHS keeps a copy of all MSDSs listed on the master Hazardous Chemicals Inventory. For after hour emergencies, the on-call OEHS staff member can be reached by contacting Security.

2. Electronic copy:

OEHS web page at www.som.tulane.edu/oehs/msds.htm or from manufacturer phone or FAX numbers listed on the web page.

VI. Employee Information and Training Program

A. Policy

1. All employees working with or potentially exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies are required to receive detailed information about such chemicals that is specific to their work area. A brief introduction to the OSHA Hazard Communication Standard and a description of the University’s Hazard Communication Plan shall be provided to new employees during employee orientation.

2. Specific hazard communication training is the responsibility of the supervisor/principal investigator. OEHS shall provide general training for supervisors/principal investigators, and/or DSRs in topics required by the OSHA Hazard Communication Standard. Supervisors/principal investigators or their representatives shall use OEHS training as a guideline to be supplemented with on-the-job instruction specific to the work area.

VI. EMPLOYEE INFORMATION AND TRAINING PROGRAM

A. Policy

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2. Specific hazard communication training is the responsibility of the supervisor/principal investigator. OEHS shall provide general training for supervisors/principal investigators, and/or DSRs in topics required by the OSHA Hazard Communication Standard. Supervisors/principal investigators or their representatives shall use OEHS training as a guideline to be supplemented with on-the-job instruction specific to the work area.
3. Supervisory training is required at the time of initial assignment and whenever a new physical or health hazard is introduced.

4. Training must be completed as expeditiously as possible.

5. Training documentation is required (e.g., quizzes or employee interviews may be used) to verify that employees have understood the training and are able to demonstrate their understanding. If it is determined that employees lack an understanding of the potential chemical hazards in their areas and the means of protecting themselves, substantial fines could be imposed upon the supervisor/principal investigator or unit. Copies of training documentation must be sent to OEHS.

   - See, Section 3, Employee Safety Training, of this manual.

B. Information to Be Provided During Training

As part of any training program for employees working with or potentially exposed to any hazardous chemicals, each employee must be provided the following information: 1) requirements of the OSHA Hazard Communication Standard; 2) knowledge of any operations in their work area where hazardous chemicals are present; 3) the location and availability of the University’s written Hazard Communication Plan, Hazardous Chemicals Inventory, and MSDSs.

C. Training

All training programs must include the following.

1. Methods and observations that may be used to detect the presence or release of hazardous chemicals in the work area (such as monitoring conducted by OEHS, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.).

2. Knowledge of potential physical and health hazards associated with the chemicals in the work area.

3. Measures employees can take to protect themselves from hazards, including specific procedures that the University has implemented to protect employees from exposure to hazardous chemicals such as: engineering controls, appropriate work practices, emergency procedures, and personal protective equipment.

4. Details of the Hazard Communication Plan, including an explanation of the labeling system, Material Safety Data Sheets, and how employees can obtain and use the appropriate hazard information.

D. Training Resources

OEHS has prepared an online Powerpoint presentation on Hazard Communication available on the OEHS website, as well as a hazard communication training handbook for use by supervisors/principal investigators and/or DSRs. The handbook is available at www.som.tulane.edu/oehs/chemrtk.htm. Additionally, OEHS has training films available for use by supervisors/principal investigators during training sessions.
E. **Review/Retrain for Non-Routine Tasks**

Before any non-routine task is performed that could involve exposure to hazardous chemicals, the employee's supervisor/principal investigator must carefully review all potential hazards of the task with the employee and describe appropriate work practice procedures. Means of protection such as personal protective equipment or engineering controls must be provided where required and training must be documented.

F. **Providing Information Re Chemicals in Unlabeled Pipes/Piping Systems**

Employees must be informed of hazardous chemicals in unlabeled pipes in their work area and of the potential hazards involved in the event of exposure to these substances (e.g., during maintenance operations). The extent of information provided shall include MSDSs and other available information. The person or unit maintaining or using the pipe/pipe system is responsible for providing this information.

<table>
<thead>
<tr>
<th>VII. Contractual Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Information Contractors Must Provide to OEHS</td>
</tr>
<tr>
<td>B. Information OEHS Must Provide to Contractors</td>
</tr>
<tr>
<td>C. OEHS Assistance in Gathering Information</td>
</tr>
<tr>
<td>D. Hazard Communication Addendum</td>
</tr>
</tbody>
</table>

**VII. CONTRACTUAL WORK**

A. Contractors must provide OEHS with a list of all hazardous chemicals that are to be used by their employees while working on University property. An MSDS for each chemical must also be available if requested. The list of hazardous chemicals and corresponding MSDSs (if requested) must be given to the University employee responsible for the contractual arrangement and/or to OEHS, and ultimately to the supervisor/principal investigator of the area. Supervisors/principal investigators bear the responsibility for training employees on the potential hazards of the chemicals to be used by contractors.

B. Before work begins, all contractors must be given an opportunity to review the written Hazard Communication Plan and the Hazardous Chemicals Inventory for the contracted work area. Contractors shall also be given an opportunity to review any relevant MSDSs. All information for the contractor shall be provided by the Tulane employee responsible for the contractual arrangement with the cooperation of the area supervisor/principal investigator or DSR.

C. Upon request, OEHS shall assist Facilities Services or other units in gathering information for exchange with contractors.

D. Each written contract entered into between the University and contractors or vendors shall include a Hazard Communication Addendum (see, Form 05F-OEHS, Hazard Communication Addendum, in Appendix E of this manual) to be completed and kept on file with the contract agreement and presented to OEHS upon request. (See, Section 5, Contractor Safety, of this manual.)
VIII. Handling Sealed Containers

A. Labels
B. MSDS Accessibility
C. Information and Training

VIII. HANDLING SEALED CONTAINERS

In work operations where employees handle chemicals only in sealed containers that are not opened under normal conditions of use (such as in receiving), the following rules shall apply in order to be in compliance with the OSHA Hazard Communication Standard:

A. Labels on incoming containers of hazardous chemicals must not be removed or defaced.

B. Copies of MSDSs that are received with incoming shipments of sealed containers of hazardous chemicals must be readily accessible to employees while in their work area. If a sealed container of a hazardous chemical is received without an MSDS, OEHS should be contacted.

C. OEHS shall provide information and training to supervisors/principal investigators who shall then ensure that employees under their supervision are provided the necessary training to protect themselves in the event of a spill or leak of a hazardous chemical from a sealed container.

IX. Laboratories

A. Labels
B. MSDS Accessibility
C. Information and Training

D. Hazardous Chemicals Inventory

IX. LABORATORIES

Although laboratories fall under the OSHA Laboratory Standard, the following rules of the OSHA Hazard Communication Standard shall also apply at Tulane:

A. Laboratories that ship hazardous chemicals must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with the labeling policy set forth in IV.A-G above, and that an MSDS(s) is provided along with the shipment. Laboratory employees must not remove or deface labels on incoming containers of hazardous chemicals. All containers of hazardous chemicals in laboratories must be labeled in accordance with the requirements set forth in IV.A-G above.
B. MSDSs must be readily accessible to laboratory employees when they are in their work areas. (Work area is defined as a room where hazardous chemicals are used and where employees are present.)

C. Laboratory employees must be provided with information and training as described in this policy.

D. Laboratories at Tulane must submit a “Hazardous Chemicals Inventory” and annual updates to OEHS as stated in this policy (See, III, Hazardous Chemicals Inventory, of this section). The Hazardous Chemicals Inventory for laboratory areas are used for 1) emergency response operations, 2) reporting under community “Right to Know” regulations, and to 3) fulfill local fire department requests for such information. A copy of the inventory shall be available within the unit or on the job site for use by emergency response staff or agencies.

X. TRADE SECRETS

The OSHA Hazard Communication Standard provides for the protection of trade secrets. Specific chemical identity may be withheld from an MSDS by a manufacturer in some instances as long as information on the hazardous properties and effects of the chemical is provided.

A. In the event of a medical emergency when immediate disclosure of the chemical identity is necessary for first aid or medical treatment, the trade secret must be divulged to health professionals, employees, and designated representatives. A written statement of need and a confidentiality agreement may be required by the manufacturer.

B. In non-emergencies, a health care professional, employee, or his/her designated representative may provide a written request for disclosure of a chemical’s identity explaining why the disclosure is essential and the procedures that shall be followed to protect the confidentiality of the information. This written request may be denied by the manufacturer; however, the manufacturer must provide an explanation describing alternative information that would satisfy the specific occupational or medical need. The person being denied is entitled to contact OSHA for review of the request and denial.

C. Whether because of a medical emergency or non-medical emergency, any employee needing the identity of a hazardous chemical that has trade secret protection shall contact OEHS for assistance.
## Food Services Health & Safety Inspection Report

**Instructions:** Checklist items should be circled “Y” for Yes, “N” for No, or “N/A” for Not Applicable. • For every item circled “N” (No), provide the “Corrective Action.” • Once corrected, provide date correction completed.

- Items not listed in this report may be included under Item V “Additional Notes” at the end of this form.

**Distribution:** On completion of the INSPECTION, the inspection report should be signed, the original retained by the department, and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The DSR will take responsibility for forwarding the copy to the Office of Environmental Health & Safety.

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**INSPECTION CONDUCTED BY (print):**

---

**Date of Inspection:** _________________

---

**CHECKLIST ITEMS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Corrective Action</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Floors and work boards are free from grease and debris</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Steam pipes are insulated</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Knives, saws, cleavers are in appropriate racks (or drawers) when not in use</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Walk in refrigerator boxes are equipped with operable safety latches and safety guards on light fixtures</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sufficient disposal containers are available</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Powered meat and food processing equipment is provided with proper guards</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Electrical connections and cords are in good condition</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The floor is free of standing water</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Smoking is not allowed except in designated areas</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. All equipment and utensils are clean</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Plumbing is in good repair, (vacuum breakers in place on submerged inlets and hose bibs)</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### I. KITCHEN (Fire Safety)
1. Filters, hoods, and ducts are clean (free from excess grease)  
   - Y N N/A  
2. Automatic or self-extinguishment system inside ducts and hoods checked regularly (every 6 months)  
   - Y N N/A  
3. Portable extinguishers are available and appropriately maintained (dated every month)  
   - Y N N/A  
4. Telephone equipped with emergency telephone number stickers (Security)  
   - Y N N/A  
5. Exits are clearly marked, illuminated and unobstructed  
   - Y N N/A

### II. CAFETERIA
1. Floors are in good repair  
   - Y N N/A  
2. Doors operate easily  
   - Y N N/A  
3. There is sufficient aisle space between tables and chairs  
   - Y N N/A  
4. The housekeeping is adequate  
   - Y N N/A  
5. The furniture is in good repair  
   - Y N N/A  
6. Portable fire extinguishers are available and properly maintained (dated every month)  
   - Y N N/A  
7. Serving line food temperatures are greater than 145°F  
   - Y N N/A  
8. Sneeze guard is in place and properly protects food  
   - Y N N/A  
9. Utensils are properly displayed (handles up)  
   - Y N N/A  
10. Ice is properly dispensed. (by employee or automatic dispensing machine)  
    - Y N N/A  
11. All employees are neat in appearance and are wearing proper hair restraints (caps, hair nets)  
    - Y N N/A  
12. Salad bar is provided with proper sneeze guard  
    - Y N N/A
### III. FOOD PREPARATION AREA

1. All walk-in coolers and refrigerators are holding food at or below 45°F  
   | Y | N | N/A | __________________________ | __________ |

2. Holding ovens are holding hot foods at or above 145°F  
   | Y | N | N/A | __________________________ | __________ |

3. There is no evidence or rodent and insect infestation  
   | Y | N | N/A | __________________________ | __________ |

4. Foods are stored properly (at least 6 inches from the floor)  
   | Y | N | N/A | __________________________ | __________ |

5. Foods are stored properly (covered containers or properly wrapped and marked)  
   | Y | N | N/A | __________________________ | __________ |

6. Water temperature for dishwashing is proper (120 °F final rinse automatic dishwasher)  
   | Y | N | N/A | __________________________ | __________ |

7. Proper sanitizing compounds are available for sanitizing pots, pans, and other items  
   | Y | N | N/A | __________________________ | __________ |

8. A lavatory with soap, sanitary towels and hot and cold running water is available in the food preparation and serving areas  
   | Y | N | N/A | __________________________ | __________ |

9. A three (3) compartment sink equipped with hot and cold running water is provided in the dietary facility  
   | Y | N | N/A | __________________________ | __________ |

10. Freezers are registering 0°F temperatures  
    | Y | N | N/A | __________________________ | __________ |

11. All cleaning utensils (mops, buckets, etc.) are stored away from the food preparation and storage areas  
    | Y | N | N/A | __________________________ | __________ |

### IV. ADDITIONAL NOTES

The person conducting this inspection, as indicated on the front page of this report, should provide his/her signature below.

______________________________

SIGNATURE OF INSPECTOR

**NOTE:**

Please remember that inspection reports are to be submitted QUARTERLY to the Departmental Safety Representative (DSR) in charge of the area. The DSR will then forward the report to the Office of Environmental Health & Safety.
SECTION 13
INSPECTION & COMPLIANCE

SECTION CONTENTS

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   B. Reasons for Inspection
   C. Types of Inspection
   D. Inspectors
   E. Compliance

II. The Inspection Process (p. 5)
   A. Components of an Inspection
   B. Techniques and Guidelines for Inspectors
   C. Remedial Action
   D. Response Time
   E. Commonly Cited Hazards

III. Inspection Reports (p. 7)
   A. Inspection Report Forms
   B. Report Distribution

ADDITIONAL READING

Environmental Health & Safety Section 2

FORMS REFERENCED

<table>
<thead>
<tr>
<th>Form Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building (General) Health &amp; Safety Inspection Report</td>
<td>12F-OEHS</td>
</tr>
<tr>
<td>Food Services Health &amp; Safety Inspection Report</td>
<td>13F-OEHS</td>
</tr>
<tr>
<td>Laboratory Health &amp; Safety Inspection Report</td>
<td>14F-OEHS</td>
</tr>
<tr>
<td>Office (General) Health &amp; Safety Inspection Report</td>
<td>15F-OEHS</td>
</tr>
<tr>
<td>Shop (General) Health &amp; Safety Inspection Report</td>
<td>16F-OEHS</td>
</tr>
<tr>
<td>Vehicle Repair Shop Health &amp; Safety Inspection Report</td>
<td>17F-OEHS</td>
</tr>
</tbody>
</table>

I. INSPECTION AND COMPLIANCE

Inspections (audits) of facilities and operations, and the documentation generated by these inspections, are mandated by law and serve to determine whether safety practices are being implemented throughout the University. Inspectors range from University personnel to governmental or insurance agencies. Of the inspections they conduct, some are scheduled, others are unannounced. Those conducted by governmental agencies are often unannounced. The fines and penalties imposed for non-compliance of federal, state and local regulations may be severe and are borne by the unit receiving the violation. (A unit is a department, section, center, or program or any number or configuration of these components.)
A. Policy

Inspections (audits) of physical facilities and operations are mandatory. Resulting documentation must be permanently retained with copies sent to the appropriate parties for any corrective action.

Those required to perform inspections may be any one of the following: 1) a representative of the Office of Environmental Health & Safety (OEHS); 2) a member of the University's Environmental Health & Safety Operations Committee (Operations Committee); 3) a member of the University's Environmental Health & Safety Policy Committee (Policy Committee); or 4) the supervisor/principal investigator in charge of a particular area/task. Inspectors from insurance companies, accrediting agencies and governmental/regulatory agencies must be accompanied by a representative of OEHS during inspections.

Employees must report potentially hazardous situations to their immediate supervisors/principal investigators or departmental safety representative (DSR), and shall be allowed to follow up the chain of command or contact OEHS if a supervisor/principal investigator or DSR fails to follow up on a complaint.

B. Reasons for Inspection

Inspections may be conducted for any of the following reasons:

1. To detect unsafe conditions and/or actions particularly in those areas where excessive numbers of incidents may be occurring.

2. To respond to complaints by affected employees.

3. To ascertain whether or not corrective measures pointed out during a prior inspection have been implemented.

4. To enable the members of the University Operations Committee, University Policy Committee, OEHS staff, and other individuals with safety related responsibilities to work with departmental personnel in implementing safety goals.

5. To help inform employees of hazards associated with facilities and/or operations.

6. To meet requirements set forth by federal, state, and local licensing, and accrediting agencies.

C. Types of Inspection

There are six types of inspections that may be used in discovering breaches of health and safety practices, or potential hazards in the work area that need correction to avoid illness or injury:

1. Periodic Inspections
   a. Supervisor/Principal Investigator Quarterly Inspections
   b. OEHS Annual Inspections
   c. Operations or Policy Committee Inspections

2. General Inspections

3. Intermittent Inspections

4. Special Inspections

5. Agency Inspections

6. Complaint Based Inspections
1. **Periodic Inspections**

   Periodic inspections are scheduled inspections that occur at regular intervals: monthly, semi annually, annually, or quarterly, or as deemed necessary.

   a. **Supervisor/Principal Investigator Quarterly Inspection**: As required by law, supervisors, principal investigators must conduct inspections of the areas under their charge every three months. Documentation of these inspections is to be retained by the supervisor/principal investigator for one year or until concerns are corrected, and a report of the concerns and plan of corrective action or suggestions is to be sent to OEHS. OEHS shall review the report and bring unresolved issues to the attention of the Unit Head and, if necessary, the University Operations Committee.

   b. **OEHS Annual Inspection**: An OEHS representative shall also conduct periodic inspections (usually annually) and send written results to the person in charge of the area or operation for corrective action.

   c. **Operations Committee, or Policy Committee Inspection**: Members of the Operations or Policy Committees may make periodic inspections as deemed necessary.

2. **General Inspections**

   General inspections involve an inspection of the entire premises.

3. **Intermittent Inspections**

   Intermittent, or walk through inspections are made at irregular intervals and may, for example, include a specific department or piece of equipment. Intermittent inspections tend to keep supervisors/principal investigators on the alert for unsafe conditions.

4. **Special Inspections**

   Special inspections are often necessary when new and/or potentially hazardous equipment/procedures have been implemented. In the event that any manipulation, action or condition is discovered that, in the opinion of the OEHS director (or his authorized representative) is considered an unsafe situation with imminent danger potential, the OEHS director (or his representative) may order the immediate cessation or modification of such manipulations, actions, or conditions as deemed necessary. A special inspection may also be conducted as a follow-up to an incident investigation.

5. **Agency Inspections**

   Agency inspections are made at irregular intervals by: the Occupational Health & Safety Administration; Louisiana Department of Environmental Quality; City of New Orleans Fire Department, Division of Fire Prevention; state health department; Office of the State Fire Marshall; insurance companies; state division of hospitals; Joint Commission on Accreditation of Hospitals; and other agencies dealing with environmental health and safety.

   Agency inspections are usually unannounced. OEHS and Risk Management should be notified if any governmental agency representative shows up or calls for an inspection. Inspectors from insurance companies, accrediting agencies, and governmental/regulatory agencies must be
accompained by a representative of OEHS during inspections. Do not leave agency inspectors unattended: in many cases inspectors will need safety equipment, personal protective equipment, and/or a health and safety orientation before entering certain areas of the University. In the process of inspection, inspectors will want to walk through a facility, review written procedures and training records, and interview employees.

6. **Complaint-Based Inspections**

Violations and deficiencies observed by affected persons may be reported directly to OEHS. OEHS shall inspect in response to valid complaints. Notification of inspection results shall be given to the complainant if requested. The right of affected personnel to report complaints of matters relating to occupational health and safety shall be exercised without retaliation by any other person.

**D. Inspectors**

1. **Qualifications:** Inspectors should have a knowledge of: a) incident experiences in the area to be inspected; b) familiarity with the area’s incident potential; c) ability to make practical recommendations for corrective action; and d) diplomacy when interacting with personnel.

2. Inspectors shall set an example by always wearing proper clothing in special areas (e.g., wear gown, cap and shoe covers in sterile supply areas, or protective eye wear in welding area, etc.)

3. Inspectors may be a) representatives of OEHS; b) Operations or Policy Committee members for periodic or special safety inspections; c) department heads/supervisors/principal investigators for in-house periodic (quarterly) inspections; or, d) official governmental agency inspectors or insurance company inspectors for agency inspections. An OEHS representative shall accompany all inspectors who perform agency inspections.

**E. Compliance**

**Departmental Safety Representatives** (DSR) help to ensure that the units they represent are in compliance with regulatory standards and Tulane University policies and procedures regarding work area inspections. DSRs collect and submit to OEHS required inspection documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the Operations Committee for consultation.

Unit’s should note that grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS will *not* certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handling Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.
II. The Inspection Process

A. Components of an Inspection

An inspection has five general components: 1) soliciting the assistance of the person in charge of the area; 2) walking around the area in search of unsafe conditions or actions; 3) interviewing employees; 4) documenting code violations, recommendations, and areas for improvement; and 5) conducting a closing conference with the person in charge of the area to facilitate corrective action.

A possible sixth component may arise when, in the course of inspection, an imminent danger becomes manifest. If this happens, the inspector must order cessation of the source, process, or operation causing the danger and immediately notify supervisors/principal investigators of the requirement for corrective action.

B. Techniques and Guidelines for Inspectors

1. When possible, consult with the supervisor/principal investigator, DSR, or other persons in charge of the area prior to inspection, giving them the opportunity to participate in the inspection process. Other faculty or staff members may be invited to comment or bring possible violations to the attention of inspectors.

2. In preparation for the inspection, review previous inspection reports covering area(s) to be inspected; analyze incident experience in the given area noting the types of hazards inherent in the area being inspected and other areas of comparable hazard potential.

3. Conduct inspections thoroughly and systematically noting all but trivial infractions which should be “verbally” pointed out rather than cited on a report. This consideration adds to the inspector’s credibility.

4. Take pictures documenting unsafe conditions and acts as needed. Photos may be used by OEHS in documenting violations and in making comparisons with corrected facilities or procedures for illustrative purposes.
5. Inspection form checklists, such as those presented in Form 12F-OEHS through Form 17F OEHS in Appendix E of this manual, are good vehicles to use during an inspection. Since the results of general or ad hoc inspections must be documented, checklists may be incorporated into the final report.

6. Be tactful in pointing out unsafe acts and unsafe conditions to employees, and notify the supervisor/principal investigator, DSR, or other person(s) in charge of results/findings.

C. Remedial Action

1. The person(s) responsible for the inspected area shall take all steps necessary to correct items noted on the inspection report.

2. When necessary, OEHS shall be consulted on the type of corrective measures to be taken to ensure that such measures are adequate.

3. When necessary, the Operations Committee may intervene to ensure corrective action.

D. Response Time

1. In most cases, a 15 day period is allowed for preparing a response to inspection report violations before a “no response” memorandum is issued by OEHS.

2. If OEHS receives no response to the inspection report, it shall follow the chain of command in its efforts to secure compliance.

3. Additional follow-up may be necessary if all violations have not been corrected within a reasonable time period.

E. Commonly Cited Hazards

Examples of hazards commonly cited during inspections:

- Chemical containers in poor condition or not properly labeled; emergency response procedures not posted in the work area; materials and equipment improperly stored; personal protective equipment not correctly selected, properly used or maintained; chemical inventory not current; MSDSs not available; machine guards missing or not in place; frayed electrical cords; chemicals being poured down the drain or put in regular trash receptacles; chemicals being stored on the floor; containers of chemicals left open or leaking; sharps being disposed in regular trash receptacles; facility repairs or renovations being conducted by unauthorized personnel; radioactive materials, other than those being actively used, not secured in locked containers; waste manifests not being maintained by responsible department for the required period; building deficiencies (poor lighting, burned out EXIT signs, etc.).
III. INSPECTION REPORTS

Observed violations of safety and health standards, deficiencies, and non-compliance items observed during general, special, periodic and intermittent inspections must be recorded in written inspection reports. Faculty or staff responsible for the inspected area shall arrange for and accomplish appropriate corrective action and thereafter respond to OEHS indicating corrective measures taken, or reasons why corrective measures have not been implemented. Reasons for failure to abate the violations must be set forth in sufficient detail to help OEHS and the Operations Committee (and, if necessary, the Policy Committee) determine what further action is required.

A. Inspection Report Forms

OEHS inspection forms each incorporate a checklist supplemented with space for 1) narrative detail, 2) statement of corrective action to be taken and 3) anticipated date of correction. Forms are located in Appendix E at the back of this manual and on the OEHS website.

- Building (General) Health & Safety Inspection Report 12F-OEHS
- Food Services Health & Safety Inspection Report 13F-OEHS
- Laboratory Health & Safety Inspection Report 14F-OEHS
- Office (General) Health & Safety Inspection Report 15F-OEHS
- Shop (General) Health & Safety Inspection Report 16F-OEHS
- Vehicle Repair Shop Health & Safety Inspection Report 17F-OEHS

B. Report Distribution

1. The supervisor's/principal investigator’s quarterly inspection reports with plans for corrective action shall be collected by the unit’s DSR and submitted to: a) OEHS for review by both OEHS and the Operations Committee, as appropriate; and b) the person(s) in charge of the area inspected.

2. OEHS inspection reports shall be sent to: a) the person(s) in charge of the area inspected; b) the immediate supervisor/principal investigator of the person(s) in charge of the area inspected.

3. Agency inspection reports shall be sent to: the OEHS director who shall send the report or statements of applicable actions to those responsible for corrective measures. These reports or statements must be answered ASAP so that OEHS may advise the inspecting agency of corrective measures taken.

4. Issues of non-compliance involving inspections shall be reported to OEHS and, if necessary, to the Operations Committee for necessary follow up and corrective measures.

End of Text – Return to Section 13, Page 1 Outline
**QUARTERLY LABORATORY INSPECTION FORM**

**Instructions:** Checklist items should be answered “Yes,” “No,” or “Not applicable.” For every item answered “No,” provide the “Corrective Action.” Once corrected, provide the date the correction is completed. Items not listed in this report may be included under “Miscellaneous: Other Items” on the last page of the form.

**Distribution:** On completion of the inspection, the original inspection report should be retained by the department and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The DSR will forward a copy to the Office of Environmental Health & Safety via campus mail (TW-16) or fax 504-988-1693.

<table>
<thead>
<tr>
<th>Inspection Conducted By (PRINT):</th>
<th>Date of Inspection:</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Campus:</th>
<th>Building and Room #s:</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Dept:</th>
<th>Telephone Number:</th>
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<table>
<thead>
<tr>
<th>Email address:</th>
<th>Signature of Inspector:</th>
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<tbody>
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</tbody>
</table>

**Note:** Please remember that inspection reports are to be submitted QUARTERLY to the DSR in charge of the area. The DSR will forward the report to the Office of Environmental Health & Safety.
## QUARTERLY LABORATORY INSPECTION FORM

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>CONCERN</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>CORRECTIVE ACTION</th>
<th>CORRECTION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HOODS AND VENTILATION</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>1 HO</td>
<td>ODS/VENTILATION WORKING/HOODS CERTIFIED WITHIN 1 YEAR (There is sufficient draft across face of hood – 80-120 fpm average face velocity. To schedule certification, contact Pam Fatland of OEHS (504) 988-2800)</td>
<td></td>
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<tr>
<td>2</td>
<td>HOOD SASH WORKING PROPERLY (Sash is not stuck, glass is not broken or etched; no repairs to sash or pulley system needed)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>PANELS/AIRFOILS ARE IN PLACE ON HOOD (Side or back panels or front airfoil are in place and are not missing or broken; hood has smooth surfaces for low turbulence)</td>
<td></td>
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<tr>
<td>4</td>
<td>VANEOMETER OR ALARM MOUNTED PROPERLY, WORKING (Vaneometer/alarm in hood is mounted and working properly, hood is not in alarm, alarm seems properly calibrated)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>CHEMICALS/EQUIPMENT ARE USED AT LEAST 6 INCHES INSIDE HOOD</td>
<td></td>
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<tr>
<td>6</td>
<td>LARGE EQUIPMENT IS NOT STORED IN FRONT OF HOOD/EXHAUST VENT</td>
<td></td>
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<tr>
<td>7</td>
<td>LOOSE PAPER TOWELS NOT LEFT IN HOOD (Can be sucked into ductwork and damage exhaust fans)</td>
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<td></td>
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<td></td>
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<tr>
<td>8</td>
<td>HOOD USED FOR EXPERIMENTS – NOT FOR CHEMICAL OR EQUIPMENT STORAGE (Exhaust ventilation should not be obstructed with excess chemical containers or large pieces of equipment)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>FILTERS ON COUNTERTOP VENTILATION UNITS ARE REPLACED PERIODICALLY AS PER MANUFACTURER’S RECOMMENDATIONS (Filter change date okay)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>VENTILATION ADEQUATE/ADDITIONAL VENTILATION NOT NEEDED (No odors or ventilation concerns noted)</td>
<td></td>
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</table>
# QUARTERLY LABORATORY INSPECTION FORM

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<th>N</th>
<th>N/A</th>
<th>CORRECTIVE ACTION</th>
<th>CORRECTION DATE</th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>BIOLOGICAL SAFETY CABINETS HAVING BEEN CERTIFIED WITHIN 1 YEAR (To schedule, contact Kim Chapital of OEHS (504) 988-2870)</td>
<td></td>
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<tr>
<td>12</td>
<td>BUNSEN BURNER NOT USED IN BIOL. SAFETY CABINET (Use of gas in a biological safety cabinet can pose a potential fire or explosion hazard, can interfere with airflow patterns, and the heat produced by the Bunsen burner can damage the HEPA filter and/or the filter’s adhesive. Instead OEHS recommends electric burners and micro-incinerators be used in the rear of the workspace.)</td>
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<tr>
<td>13</td>
<td>FIRE EXTINGUISHER/FIRE EQUIPMENT IS ACCESSIBLE (not obstructed)</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>FIRE EXTINGUISHER IS MOUNTED AND LOCATED NEAR THE EXIT OR NEARBY IN HALLWAY</td>
<td></td>
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<td></td>
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<tr>
<td>15</td>
<td>FIRE EXTINGUISHER HAS BEEN INSPECTED WITHIN LAST MONTH</td>
<td></td>
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<tr>
<td>16</td>
<td>THERE IS NO STORAGE LOCATED WITHIN 18 INCHES OF A SPRINKLER HEAD</td>
<td></td>
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<tr>
<td>17</td>
<td>EMERGENCY LIGHTS/STROBES ARE NOT OBSTRUCTED</td>
<td></td>
<td></td>
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<tr>
<td>18</td>
<td>EXITS ARE NOT OBSTRUCTED AND ARE PROPERLY MARKED</td>
<td></td>
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</tr>
<tr>
<td>19</td>
<td>A PLUMBED EYEWASH STATION IS AVAILABLE (OEHS does not recommend plastic eyewash bottles containing saline. Eyewash is required in areas where corrosives or irritants are used.)</td>
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14F-OEHS/Tulane (Rev. 4/08) Inspection & Compliance
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<th>N</th>
<th>N/A</th>
<th>CORRECTIVE ACTION</th>
<th>CORRECTION DATE</th>
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</thead>
<tbody>
<tr>
<td>20</td>
<td>EYEWASH/DRENCH HOSE/SHOWER IS EASILY ACCESSIBLE (Not obstructed)</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>21</td>
<td>EYEWASH/DRENCH HOSE IS WORKING PROPERLY (No adjustments needed, water pressure adequate)</td>
<td></td>
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</tr>
<tr>
<td>22</td>
<td>SHOWER HANDLE IS IN PLACE (Not missing, does not need repair, cover plate at ceiling not coming off)</td>
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<tr>
<td>23</td>
<td>EYEWASH HAS PROTECTIVE CAPS IN PLACE OVER NOZZLES (Keeps nozzles from becoming dirty and clogged)</td>
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<tr>
<td>24</td>
<td>EYEWASH IS NOT DRIPPING/LEAKING/NOT DRAINING (Plumbing repairs are not needed)</td>
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<tr>
<td></td>
<td><strong>SIGNAGE</strong></td>
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<tr>
<td>25</td>
<td>DOOR/HAZARD/ROOM SIGN IS UP-TO-DATE (No changes needed, appropriate hazard and emergency information is listed)</td>
<td></td>
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<tr>
<td>26</td>
<td>EYEWASH/REFRIGERATOR/EQUIPMENT LABELS ARE IN PLACE (No additional biohazard, radiation, etc. labels needed for equipment)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>27</td>
<td>SIGNAGE IS MOUNTED PROPERLY (Not coming off, easily visible, not obstructed)</td>
<td></td>
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<tr>
<td></td>
<td><strong>REFRIGERATORS/FREEZERS</strong></td>
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<tr>
<td>28</td>
<td>FLAMMABLES ARE NOT STORED IN IMPROPER REFRIGERATOR/FREEZER/COLD ROOM (Flammables cannot be stored in refrigerator/freezer/cold room which is not designed for flammable storage – must be explosion proof or flammable liquid storage refrigerator/freezer)</td>
<td></td>
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<tr>
<td>29</td>
<td>REFRIGERATOR/FREEZER/COLD ROOM IS CLEAN &amp; IN GOOD CONDITION (Does not need defrosting or cleaning)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>30</td>
<td>FOOD/BEVERAGES ARE NOT PRESENT IN LAB REFRIGERATOR/FREEZER/COLD ROOM</td>
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</tr>
</tbody>
</table>

14F-OEHS/Tulane (Rev. 4/08) Inspection & Compliance
### QUARTERLY LABORATORY INSPECTION FORM

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>CONCERN</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>CORRECTIVE ACTION</th>
<th>CORRECTION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>GASKET IN GOOD CONDITION (Does not need replacement or cleaning)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>EATING/DRINKING/SMOKING/ATTIRE</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>THERE IS NO EVIDENCE OF EATING/DRINKING/SMOKING IN LAB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>APPROPRIATE LAB ATTIRE IS WORN IN LAB (No shorts/sandals/flip-flops, etc.)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>BIOHAZARDS/SHARPS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>ALL SHARPS ARE SECURED (No razor blades or needles left on counters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>PROPER BIOHAZARD WASTE AND SHARPS CONTAINERS ARE USED (Appropriate red bags, boxes, puncture proof sharps containers available)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>36</td>
<td>SHARPS BOX IS UPRIGHT WITH COVER IN PLACE (Not on side, sharps cannot spill out)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>37</td>
<td>GLASS BOX/BIOHAZARD/SHARPS BOX IS DISPOSED WHEN NEEDED (Not overflowing, no greater than two-thirds full)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>38</td>
<td>BROKEN GLASS/GLASSWARE DISCARDED PROPERLY (Glassware in lab in good condition, broken glass/glassware discarded properly)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>39</td>
<td>BIOHAZARD WASTE KEPT COVERED (No open containers of biohazard waste in lab)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>CHEMICAL STORAGE</strong></td>
<td></td>
<td></td>
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<tr>
<td>40</td>
<td>GAS CYLINDERS SECURED PROPERLY (Upright, tightly secured with proper chain, strap, or cylinder stand on top third of cylinder)</td>
<td></td>
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## QUARTERLY LABORATORY INSPECTION FORM

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</thead>
<tbody>
<tr>
<td>41</td>
<td>GAS CYLINDERS HAVE CAPS IN PLACE (Unless in use and attached to a regulator)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>42</td>
<td>FLAMMABLE CABINET IS LATCHED AND CLOSES PROPERLY (No repairs needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>FLAMMABLE CABINET/REFRIG/SHELVING ARE ACCESSIBLE AND STEADY (No rocking, access not blocked by equipment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>LESS THAN 10 GALLONS OF FLAMMABLE LIQUIDS ARE STORED IN GLASS CONTAINERS OUTSIDE OF A FLAMMABLE LIQUID STORAGE CABINET</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>45</td>
<td>CHEMICALS ARE NOT STORED ON FLOOR (Unless secondary containment is used)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>46</td>
<td>INCOMPATIBLE CHEMICALS ARE STORED SEPARATELY (Acids separate from bases, oxidizers separate from flammables)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>CHEMICAL CONTAINERS ARE IN GOOD CONDITION (Cans not corroding, caps not leaking, containers not cracked)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>CONTAINERS OF CHEMICALS ARE OF 1 GALLON SIZE OR SMALLER, EXCEPT IF STORED IN SAFETY CANS (2 GAL MAXIMUM SIZE SAFETY CANS FOR LABS)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>49</td>
<td>ETHER &amp; PEROXIDE-FORMING CHEMICAL DATED AND USED WITHIN SIX MONTHS (Or peroxide testing is performed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>50</td>
<td>ALL CONTAINERS ARE PROPERLY LABELED (Full chemical name &amp; associated hazards, no symbols or abbreviations)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>ALL CONTAINERS ARE CAPPED UNLESS ACTIVELY POURING (No open containers, no containers with funnels left in hood)</td>
<td></td>
<td></td>
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</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>CHEMICALS/GLASSWARE STORED PROPERLY (Not on edge of shelf, under lock &amp; key if required, large containers of acids on lower shelves, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>53</td>
<td>CHEMICALS DISPOSED PROPERLY (There is no large accumulation of hazardous waste in lab; hazardous wastes are properly contained, stored, labeled and proper disposal procedures are followed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>HIGHLY TOXIC MATERIALS, CARCINOGENS, ETC. ARE KEPT IN CLOSED CONTAINERS AND USED WITH ADEQUATE VENTILATION IN MARKED, DESIGNATED AREAS</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>55</td>
<td>A CHEMICAL INVENTORY IS SUBMITTED TO OEHS AT LEAST ANNUALLY FOR THIS LAB</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>56</td>
<td>EMPLOYEES IN LAB ARE TRAINED IN THE PROPER HANDLING OF HAZARDOUS MATERIALS AND WASTES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>AN UP-TO-DATE CHEMICAL HYGIENE PLAN AND STANDARD OPERATING PROCEDURES ARE AVAILABLE FOR THIS LAB (Must be submitted to OEHS at least annually)</td>
<td></td>
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</tbody>
</table>

### EQUIPMENT/ELECTRICAL

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>CONCERN</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>CORRECTIVE ACTION</th>
<th>CORRECTION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>ELECTRICAL EQUIPMENT AND CORDS ARE IN GOOD CONDITION (Do not need repair or discard, no frayed wires, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>EQUIPMENT GUARDED PROPERLY (Protective guards located around belts &amp; pulleys, pinch-points, moving parts, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>ELECTRICAL OUTLET/LIGHT SWITCH COVERS IN GOOD CONDITION (Not cracked or broken)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>ELECTRICAL PANELS ARE NOT OBSTRUCTED (Fire codes require 3-foot clearance around electrical panels)</td>
<td></td>
<td></td>
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</tr>
</tbody>
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</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>ADEQUATE NUMBER OF GROUNDED ELECTRICAL RECEPTACLES ARE PROVIDED/EQUIPMENT IS PLUGGED IN PROPERLY (No cheater plugs used, proper outlet for three-prong electrical equipment, etc.)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>MULTI-OUTLET STRIPS USED ONLY FOR COMPUTER CONFIGURATIONS (Not to be used for other lab equipment)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>EXTENSION CORDS ONLY USED FOR TEMPORARY PURPOSES (Not being used for permanent fixed wiring. If additional outlets are needed, contact Facilities Services)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>ELECTRICAL CORDS ARE NOT RUN THROUGH DOORWAYS/WALLS/CEILINGS</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>EQUIPMENT IS STORED PROPERLY (Not falling off shelves or stored in aisles)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>LIGHTS/EXIT SIGNS/EMERG LIGHTS WORKING PROPERLY (None are burned out)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>THERE IS NO SPACE HEATER LOCATED IN LAB</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>HEAT PRODUCING EQUIPMENT IS USED PROPERLY (Not left on and unattended, or used near flammable liquids)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>HOUSEKEEPING AND RELATED HAZARDS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>HOUSEKEEPING IN LAB GOOD (Counters &amp; aisles not cluttered, no spills/leaking materials, no trash strewn about, etc.)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>PAPER PADS IN GOOD CONDITION (Not dirty or in need of replacement)</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>COMBUSTIBLES (boxes, cardboard, etc.) NOT STORED IN LAB</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>CONCERN</td>
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</tr>
<tr>
<td>73</td>
<td>NO EVIDENCE OF MOLD GROWTH; CEILING TILES NOT STAINED OR MISSING; NO WATER STAINS ON WALLS OR FLOORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>NO EVIDENCE OF PEELING PAINT/RUST/STAINS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>AISLES &amp; EXITS ARE MAINTAINED (Not obstructed)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>76</td>
<td>NO SLIP/TRIP HAZARDS OBSERVED (No cords across aisles, no broken floor tiles, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>77</td>
<td>DOORS ARE LATCHING PROPERLY/STAIRWELL DOORS ARE NOT PROPPED OPEN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>NO HOLES IN WALLS/CEILINGS (Contact Facilities Services for repairs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>79</td>
<td>NO HALL OR STAIRWELL STORAGE</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>80</td>
<td>NO TRASH OVERFLOWING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>NO EVIDENCE OF A SPILLED OR LEAKING CHEMICAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>TUBING FOR BUNSEN BURNER/GAS USE IS IN GOOD CONDITION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>LAMINATE ON COUNTERS IS IN GOOD CONDITION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>CABINET DOORS ARE CLOSING PROPERLY</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>PERSONAL PROTECTIVE EQUIPMENT (PPE)</strong></td>
<td></td>
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<tr>
<td>85</td>
<td>PPE IS STORED PROPERLY (Goggles not hanging by straps, respirators stored in plastic bag, etc.)</td>
<td></td>
<td></td>
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<tr>
<td>86</td>
<td>USED PPE DISPOSED PROPERLY (No dirty gloves left on counter, etc.)</td>
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<tbody>
<tr>
<td>87</td>
<td>PPE USED WHEN NEEDED (Goggles worn when pouring chemicals, facesheilds and proper gloves used with cryogenics, etc.)</td>
<td></td>
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<td></td>
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<tr>
<td>88</td>
<td>PPE AVAILABLE AND IN GOOD CONDITION (Gloves not torn, eyewear not scratched or dirty, etc.)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>89</td>
<td>EMPLOYEES ARE TRAINED IN PROPER USE OF PPE AND ARE FAMILIAR WITH ANY LIMITATIONS</td>
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**MISCELLANEOUS**

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</thead>
<tbody>
<tr>
<td>90</td>
<td>FAUCET/ SINK WORKING PROPERY - DOES NOT NEED REPAIR (Doesn’t drip, leak, etc.)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>91</td>
<td>BICYCLES ARE NOT LOCATED IN LAB OR HALLWAY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>FURNITURE IS IN GOOD CONDITION AND APPROPRIATE FOR LAB USE (Not broken or in need of repair)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>OTHER ITEMS:</td>
<td></td>
<td></td>
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</tbody>
</table>
SECTION 14
PERSONAL PROTECTIVE EQUIPMENT

SECTION CONTENTS

I. Personal Protective Equipment (p.1)
   A. Hazard Assessment Certification Program
   B. Hazard Assessment
   C. Training
   D. Appropriate Equipment

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   A. Head Protection
   B. Eye and Face Protection
   C. Hearing Protection
   D. Hand Protection
   E. Foot Protection

III. Protective Clothing (p.7)
    A. Selection
    B. Types of Protective Clothing
    C. Maintenance

IV. Safety Belt/Harness Protection (p.9)
    A. ANSI Approval
    B. Training
    C. Maintenance

V. Compliance (p.10)

ADDITIONAL READING

Employee Training Section 3
Ergonomics Section 11
Hazard Communication Section 12
Hazardous Materials Safety Section 29
Respiratory Safety Section 15

FORMS REFERENCED

Employee Safety Training Acknowledgement 04F-OEHS
Personal Protective Equipment Assessment 11F-OEHS

I. PERSONAL PROTECTIVE EQUIPMENT

The Occupational Safety and Health Administration (OSHA) requires employers to assess work areas to determine whether hazards are present, or are likely to be present, that necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall
select and require use of PPE that affords protection against 1) hazards inherent in the type of work performed by the employee, 2) hazardous materials used by the employee, and/or 3) hazards present in the employee’s work environment. Under no circumstance shall an unprotected person be knowingly subjected to a hazardous environmental condition. PPE must be properly fitted and must be maintained in a sanitary and reliable condition.

A. Hazard Assessment Certification Program

In response to OSHA requirements, OEHS has developed a Personal Protective Equipment-Hazard Assessment Certification Program (PPE-HACP) to assist units in meeting OSHA compliance standards. This program addresses the issues of 1) hazard assessment, 2) employee training, and 3) use of appropriate personal protective equipment as a safeguard against potential head, face, eye, hand, or foot injuries. (A unit is a department, section, center, or program or any number or configuration of these components.)

Supervisors/principal investigators are responsible for implementation of the PPE-HACP. The cost of implementation and maintenance (training, equipment, record keeping) shall be borne by the respective units. The Office of Environmental Health and Safety (OEHS) shall procure and make available appropriate audio/visual and printed materials for use in training.

B. Hazard Assessment

1. Units shall assess (in writing) work areas to determine whether there are hazards that may necessitate the use of personal protective equipment. Form 11F-OEHS, “Personal Protective Equipment Assessment” (located in Appendix E of this manual) must be used for this purpose. The form must be certified by the unit representative performing the assessment. The original shall be forwarded to OEHS with a copy retained in the unit.

2. Reassessments must be conducted every two years or whenever a new hazard warrants reassessment. A reassessment of the work area should include a) a look at new equipment or processes; b) a review of any accident records; and c) a reevaluation of previously chosen PPE. Reassessments must be forwarded to OEHS with a copy retained in the unit.

C. Training

1. All employees required to use PPE shall be trained to know: a) when PPE is necessary; b) how to select PPE; c) how to properly don, doff, adjust, and wear PPE; d) the limitations of PPE; e) the proper care, maintenance, and storage; and f) how to properly dispose of PPE.

2. Before being allowed to perform work requiring the use of PPE, an employee must demonstrate: a) an understanding of PPE use and limitations; b) proper donning and doffing of PPE; and c) adequately demonstrate to his/her supervisor/principal investigator an ability to use PPE.

3. All training must be documented using an Employee Safety Training Acknowledgment form (Form 04F-OEHS located in Appendix E of this manual), the original of which shall be forwarded to OEHS with a copy kept in the unit.

4. Training shall be done when a new employee is hired, periodically, and whenever new hazards or new PPE are introduced into the work area.
5. If there is reason to believe that any employee who has already been trained does not have the understanding and skill required, the employee must be retrained. Circumstances where retraining is required include, but are not limited to, situations where: a) changes in the workplace render previous training obsolete; b) changes in the types of PPE to be used render previous training obsolete; c) inadequacies in an employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

D. Appropriate Equipment

Unit supervisors/principal investigators are responsible for choosing the appropriate PPE for employees under their supervision given the identified potential hazards to which such employees might be exposed. The equipment must fit properly. Defective or damaged equipment must not be used.

II. Types of Personal Protective Equipment

A. Head Protection
   1. Proper head protection is to be worn by employees when working in areas where there is a potential for injury to the head from falling objects.
   2. Protective helmets designed to reduce electrical shock hazard must be worn by each employee when near exposed electrical conductors that could contact the head.
   3. Protective helmets purchased after July 5, 1994 shall comply with ANSI Z89.1-1986 or shall be demonstrated to be equally effective. Protective helmets purchased before July 5, 1994 shall comply with ANSI Z89.1-1969 or shall be demonstrated to be equally effective.
   4. The purchase, selection, use, and associated cost of required head protection is the responsibility of the unit involved.
   5. All head protection must be kept clean. Cracked headgear must be replaced. Head suspension straps and sweat bands must be properly maintained in a safe and sanitary manner.
   6. Any non-compliance or injury resulting from failure to wear the proper head protection that occurs after the orientation period shall subject the violator and/or the unit to disciplinary action.
B. **Eye and Face Protection**

1. Employees in occupations such as painting, vehicle repair or service, carpentry, construction, plumbing, landscape, maintenance, metals trade, chemistry and any occupation that involves hazards such as from flying particles, or potentially injurious light radiation are required to wear appropriate safety glasses/goggles and/or face protection at all times while such work is being done. For protection against molten metal, chemical gases or vapors, or chemical splash, safety goggles or face shields must be worn.

2. Custodial employees are required to wear safety goggles or face shields when using abrasive or caustic cleansers.

3. Food Service employees must wear safety glasses/goggles when there is a possibility of injury from caustic cleaning materials, flying particles, hot fat splatters and other associated hazards.

4. Management level employees subject to occasional visits to areas requiring eye protection, such as machine, welding, metals and carpentry shops, boiler and equipment rooms, power houses, construction areas, chemical labs, and other areas that could cause injury to the eye are required to wear eye protection.

5. **Approval and Selection of Eye Wear:**

   a. Each employee shall use eye protection that provides side protection when there is a hazard from flying objects. Protective eye and face devices shall comply with ANSI Z87.1, 1998. Detachable side protectors (e.g. clip-on or slide-on shields) meeting the pertinent requirements are acceptable.

   b. Employees who wear prescriptive lenses while engaged in operations that involve eye hazards must wear eye protection that incorporates the prescription in its design, or must wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses. The frames must have side shields and brow guards that meet the ANSI standard.

   c. Each employee must use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation. Proper eye protection selection shall be in accordance with ANSI standards.

   d. Eye and face PPE must be distinctly marked to facilitate identification of the manufacturer.

6. The purchasing, selection, use, and associated cost of required eye and/or face protection is the responsibility of the unit.

7. All eye protection must be kept clean and properly stored in a place where it will not get dirty or scratched. Badly scratched, damaged, or defective items must not be used and must be replaced.

8. The **American Chemical Society's Committee on Chemical Safety** has issued a statement that the formerly perceived risks of wearing of contact lenses in laboratories were based on rumors, and after careful study by knowledgeable consultants, has refuted these risks. The
studies have suggested that contact lenses don't increase risks but can actually minimize or prevent injury in many situations. The committee is of the consensus that contact lenses can be worn in most work environments provided the same approved eye protection is worn as is required of other workers in the area.

9. Any non-compliance or injury resulting from failure to wear the proper eye protection that occurs after training shall subject the violator and/or the unit to appropriate disciplinary action.

C. Hearing Protection

Hearing protectors shall be provided in accordance with OSHA's Occupational Safety and Health Standards, Section 1910.95, Subpart G, “Occupational Noise Exposure.” All employees operating noisy equipment (e.g., equipment rooms, wherever operating chipping hammers are used, etc.), or performing their duties in noisy work areas, are covered by this policy.

1. OEHS is responsible for monitoring noise exposure when notified of a potential noise problem. If a noise problem is verified, OEHS shall advise the unit of actions necessary to reduce exposure. Such actions would include an effective hearing conservation program when noise levels exceed an 8 hour TWA of 85 dBA. Exposure to impulse or impact noise must not exceed 140 dBA peak sound pressure level.

   a. All control measures including earplugs or ear muffs must be approved by OEHS. Engineering controls are preferable; however, personal hearing protective devices may be used while engineering aspects are being implemented.

   b. Hearing tests for employees receiving excessive exposures or exposures above the regulatory limit can be handled through the Occupational Medicine Clinic.

2. Supervisors and/or foremen running units that are producing noise levels exceeding OSHA standards shall be held responsible for:

   a. correcting the problem or ensuring that sound dampening devices are installed;

   b. establishing a policy regarding the purchasing, handling and associated costs of hearing protectors after consultation with OEHS;

   c. training employees as to the proper type of hearing protectors needed to reduce exposure to levels that are acceptable. Employee and instructor must sign a statement verifying that the information was presented to and understood by the employee.

   (See, Form 04F-OEHS, Employee Training Acknowledgment & Trainer Certification);

   d. making certain that employees under their supervision adhere to simple safety practices.

3. All hearing protectors must be kept clean, sanitary, properly stored, and kept in good condition. Where possible, single-use ear plugs shall be used because they are generally more acceptable to employees and require no maintenance program.
4. Once an employee is trained, any non-compliance or injury resulting from a failure to wear the proper hearing protection, shall subject the violator an d/or the unit to appropriate disciplinary action.

D. Hand Protection

1. Each employee is required to wear hand protection when his/her hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

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

3. Selection of the appropriate hand protection shall be based on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

4. Purchasing, selection, use, and associated cost of hand protection is the responsibility of the unit involved.

5. All hand protection must be kept clean. Inspect gloves before use. Badly worn, torn, or damaged items must be replaced.

6. Barrier creams and lotions can provide some skin protection but should never be a substitute for gloves, protective clothing, or other protective equipment. These creams should only be used to supplement the protection offered by protective equipment.

7. Wash hands upon removal of gloves whenever possible especially if using hazardous materials, infectious materials, radioactive materials, etc.

8. Any non-compliance or injury resulting from failure to wear the proper hand protection that occurs after the orientation period shall subject the violator and/or the unit to appropriate disciplinary action.

E. Foot Protection

1. Each employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling and rolling objects, objects piercing the sole, or where an employee's feet are exposed to electrical hazards. This is especially applicable to Facilities Services staff who are involved with materials handling.


3. Appropriate shoes, offering protection for both feet and toes, shall be worn in areas where hazardous chemicals are in use. Clogs, perforated shoes, sandals, and cloth shoes do not provide protection against spilled chemicals. In some cases, safety shoes are required. Shoe covers may be required for work with especially hazardous materials. Shoes with conductive
soles are useful in preventing buildup of static charge, and insulated soles can protect against electrical shock.

4. The purchase, selection, use age, and associated cost of required foot protection is the responsibility of the unit involved.

5. All required foot protection must be kept in good condition and must be replaced if defective or damaged.

6. Any non-compliance or injury resulting from failure to wear the proper foot protection that occurs after the orientation period shall subject the violator and/or the unit to appropriate disciplinary action.

III. Protective Clothing

A. Selection

B. Types of Protective Clothing

C. Maintenance

III. PROTECTIVE CLOTHING

Protective clothing, although not specifically covered in OSHA’s Final Rule on personal protective equipment (PPE), is covered by other OSHA standards including the General Duty Clause, the Laboratory Standard, etc. It shall be addressed in the same manner as eye/face, head, foot, and hand protection in the Personal Protective Equipment-Hazard Assessment Certification Program. Any non-compliance or injury resulting from failure to wear protective clothing that occurs after the orientation period shall subject the violator and/or the unit to appropriate disciplinary action.

A. Selection

Selection of the appropriate protective clothing shall be based on an evaluation of the task(s) to be performed, conditions, duration of use, and the hazard(s) and potential hazards identified. Criteria such as resistance to physical hazards, flexibility and ease of movement, chemical and thermal resistance, and ease of cleaning and disposal should be taken into consideration.

1. Careful consideration must be given to comfort and fit of PPE. PPE that fits poorly shall not afford the necessary protection. Care must be taken to ensure the right size is selected.

2. Some garments made from synthetic fibers are highly resistant to corrosive chemicals. However, certain synthetic fibers and plastic materials used in personal protective clothing can, owing to friction during use in very low humidity areas, generate static electricity and therefore their use in fire restricted areas or working with flammables could present a possible fire ignition source. Garments should therefore be selected based on their resistance to the chemicals most frequently handled in a work area.
3. When hazardous chemicals, hazardous waste or extensive heat are involved, OEHS should be contacted when selecting protective clothing.

4. Purchasing, selection, use, and associated cost of protective clothing is the responsibility of the unit involved.

5. PPE alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound work practices.

B. Types of Protective Clothing

1. **Coveralls**

   **Light Duty, Synthetic and Natural Fibers.** General work coveralls made from synthetic and natural fibers provide protection for mechanics, machinists, maintenance employees, etc., who are exposed to dirt, grease and grime. Static-free fabrics do not cling and are recommended in the presence of explosive materials that could be ignited by static electric sparks. Some coveralls are treated for fire resistance. Because synthetic fabrics with high tensile strength are resistant to mild chemicals, acids, paint and grease, they are appropriate for oil and chemicals workers. Coveralls with attached hoods are particularly suitable for boiler maintenance crews.

2. **Aprons**

   **Light Duty, Synthetic and Natural Fibers.** These aprons are made from various kinds of serviceable fabrics for general duty shielding of the wearer and his street clothing from dirt, dust, chips and other essentially non-hazardous materials. The bib type protects the chest area as well as lower part of the body. The waist type is secured at the waist for protection of the abdomen and legs. The split-leg type in both bib and wrist styles is divided as far as the crotch and fastened around each leg to give the wearer greater freedom of movement. Synthetic fabric aprons are long wearing and resist deterioration caused by acids, caustics and many chemicals. These aprons may also be static free/fire resistant (static sparks in the presence of explosive vapors, dusts, etc.).

3. **Coats/Jacket**

   **Light Duty, Synthetic and Natural Fibers.** Light-duty coats in a variety of fabrics and styles protect workers and their clothing from dirt, dust, paint, mild chemicals, caustic fumes, etc. Static-free fabrics do not cling and are recommended in the presence of explosive gases, vapors and dusts. Some coats are treated for fire resistance. Long coats or short jackets woven from synthetic fibers are acid and caustic resistant, making them especially serviceable for the laboratory. **Recommended uses:** to protect outdoor clothing in general duty work and in operations with mild chemicals.

4. **Suit**

   **Chemical, Liquid and Dust Hazards.** Lightweight, waterproof suit designed for general maintenance, utility and repair work is generally self-ventilating to allow warm clothing to be worn underneath it and consists of a jacket, overall and sometimes a hood. Suits are of plastic, natural and synthetic rubber and synthetic-coated fabric. The materials may also be sufficiently flame resistant. **Recommended uses:** suitable for use in the presence of dangerous dusts such as may be encountered in radiation survey work.
5. **Coveralls**

**Chemical and Liquid Hazards.** Coveralls made of impervious materials protect personnel who may be exposed to splashes or sprays of solvents, oils, acids, alkalis and other chemicals. These protective garments cover the entire body except the head, hands and feet. Fluid resistant clothing is appropriate for personnel exposed to blood and body fluids. The proper material must be selected for the particular hazard involved. *Recommended uses:* suitable for acid handlers, lab workers, washers, etc.

C. **Maintenance**

All PPE shall be kept clean and properly maintained at regular intervals so that the PPE provides the requisite protection. Damaged or badly worn clothing is to be replaced. Clothing contaminated with chemicals, blood or body fluids, etc., must not to be taken home for laundering but shall be sent to a commercial laundering facility. Contaminated PPE that cannot be decontaminated must be disposed of in a manner that protects employees from exposure to hazards. Cost of decontamination and/or replacing contaminated protective clothing is the responsibility of the unit.

IV. **Safety Belt/Harness Protection**

   A. **ANSI Approval**

   All such devices shall bear the ANSI A 10.14 approval.

   B. **Training**

   Supervisors/principal investigators must train employees in the proper use of protective equipment. Employee and instructor must sign a statement that the information was presented to and understood by the employee. *(See, Form 04F-OEHS, Employee Safety Training Acknowledgment)*
C. Maintenance

All equipment must be kept clean, in good repair, and must be properly stored.

V. Compliance

Departmental Safety Representatives (DSR) help to ensure that the units they represent are in compliance with regulatory standards and Tulane University policies and procedures regarding personal protective equipment and the Personal Protective Equipment-Hazard Assessment Certification Program outlined in this section. DSRs collect and submit to OEHS the training documentation, PPE assessments, and other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee for consultation.

Unit's should note that grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grant may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handling Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.

End of Text – Return to Section 14, Page 1 Outline
## OFFICE (General) Health & Safety Inspection Report

**Instructions:** Checklist items should be circled “Y” for Yes, “N” for No, or “N/A” for Not Applicable. • For every item circled “N” (No), you must provide the “Corrective Action.” • Once corrected, provide date correction completed. • Items not listed in this report may be included under Item II “Additional Notes” at the end of this form.

**Distribution:** Upon completion of the Inspection, this report must be signed by the inspector, the original retained by the department, and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The department should keep the originals for at least three years. The DSR will take the responsibility for forwarding the copy to the Office of Environmental Health and Safety (OEHS) via campus mail (TW16), fax – 504-988-1693, or hand delivery. They may be given to the OEHS rep on site. Please print clearly.

**Date of Inspection:**

Inspection conducted by: ___________________________ Phone: ___________________________

E-mail: ___________________________ Campus: ___________________________ Building: ___________________________

Dept: ___________________________ Floor/Rm Nos: ___________________________

Name of DSR: ___________________________

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### CHECKLIST ITEMS

<table>
<thead>
<tr>
<th>I. GENERAL</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
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<td>1. Proper lifting and carrying techniques (body mechanics) were observed being used</td>
<td>Y</td>
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### II. ADDITIONAL NOTES

The person conducting this inspection, as indicated on the front page of this report, must provide his/her signature below.

________________________

SIGNATURE OF INSPECTOR

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### OFFICE (General) Health & Safety Inspection Report

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SECTION 15
RESPIRATORY PROTECTION

SECTION CONTENTS

I. Respiratory Protection (p.1)
   A. Respiratory Protection Program
   B. Responsibility
II. Respiratory Equipment (p.4)
   A. Fit Testing
   B. Selection
   C. Correct Usage
   D. Maintenance, Care, Storage

III. Program Implementation (p.8)
   A. Training
   B. Work Place Surveillance
   C. Medical Surveillance
   D. Inspection and Evaluation

IV. Compliance (p.11)

ADDITIONAL READING

Employee Training Section 3
Hazard Communication Section 12
Hazardous Materials Safety Section 29
Inspection and Compliance Section 13
Personal Protective Equipment Section 14

TABLES / FORMS REFERENCED

NIOSH/MSHA Codes for Respirator Cartridges,
Filters, Canisters Table, Page 7
Respiratory Hazard Assessment 19F-OEHS

I. RESPIRATORY PROTECTION

Respiratory protection shall be provided whenever such equipment is necessary or desirable to protect the health or provide for the comfort of University employees. This policy shall apply University-wide and shall include all situations where personal protection is required against the inhalation of hazardous material. Protection shall be used 1) when effective engineering controls are not feasible; 2) during emergencies; 3) for certain maintenance operations; 4) while controls are being instituted; 5) when

Respiratory Protection / Page 1 / SECTION 15
indicated by the MSDS for a given chemical; or 6) if ambient concentrations of toxic or hazardous materials exceed permissible exposure limits (PELs) or threshold limit values (TLVs). All employees requiring respiratory protection shall be properly trained in procedures for the use, maintenance, storage, and care of protection equipment. Employees shall also be trained in elements of the Respiratory Standard and Tulane policies and procedures regarding respiratory protection.

A. Respiratory Protection Program

In accordance with 29 CFR 1910.134 C, this written Respiratory Protection Program (RPP) has been developed and shall be implemented by a suitably trained program administrator from OEHS.

A customized respiratory protection program for each unit using respiratory protection, shall be designed to carry out the respiratory protection policy, and shall include procedures for:
1) identifying hazards to which an employee may be exposed; 2) selecting the correct respiratory protection; 3) training of personnel in the proper use, maintenance, and care of respiratory equipment; 4) routine surveillance of the work place to address changes and new issues, if any; 5) medical surveillance of employees using respirators; 6) periodic inspections to ensure compliance with the RPP, and with applicable regulatory standards; 7) using respirators during emergency situations; and 8) fit testing for tight-fitting respirators.

B. Responsibility

1. Office of Environmental Health and Safety

Tulane’s Office of Environmental Health & Safety (OEHS) shall be responsible: a) for developing a written University wide respiratory protection program; b) for assisting units that use respirators in developing a respiratory protection program customized to each unit and for evaluating the program’s performance and effectiveness; c) for designating a program administrator to oversee the RPP; and d) for conducting federal Occupational Safety and Health Administration (OSHA) required evaluations. (A unit is a department, section, center, or program, or any number or configuration of these components.)

2. Unit Responsibility

a. Each unit shall provide OEHS with an identification and evaluation of the respiratory hazard(s) in its work area(s). This would include completion of the Respiratory Hazard Assessment form (see. Form 19F-OEHS in Appendix E of this manual). The evaluation shall include a reasonable estimate of employee exposure to respiratory hazards and an identification of the chemical state and physical form of contaminants in the environment/atmosphere. When a worker’s exposure cannot be identified or reasonably estimated, the work environment/atmosphere shall be considered immediately dangerous to life and health (IDLH).

b. When respiratory protection is required, each unit shall be responsible for providing the proper equipment and for ensuring that the provisions of the RPP are carried out. As needed, OEHS shall provide assistance in setting up a customized respiratory protection program.

c. Each unit shall select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable given its intended use.
d. Each unit shall provide and shall bear the cost of all medical evaluations, examinations, and fit testing for University employees who wear respirators.

3. Supervisors/Principal Investigators

Each supervisor/principal investigator shall be responsible for the administration and enforcement of the respiratory protection program for employees under their supervision.

4. Employees

a. Employees shall be required to use respiratory equipment in accordance with the training and instructions they receive. To determine an employee's ability to wear a respirator, employees shall be required to have a medical evaluation: 1) prior to being fit tested or required to wear a respirator to determine if one is needed; 2) as changes may occur to the wearer or to the environment; and 3) periodically thereafter depending upon the activity performed and the particular regulation that governs the activity/chemical and Tulane policies and procedures governing the activity/chemical. Contact OEHS for assistance in this area.

b. At a minimum, employees shall receive a medical evaluation using the questionnaire in Sections 1 and 2, Part A of Appendix C of the Respiratory Standard or an initial medical examination that obtains the same information as the medical questionnaire. A follow up medical examination shall be provided to any employee that answers positive to any of questions 1 through 8 in Section 2, Part A of Appendix C of OSHA 29 CFR 1910.134, and shall include medical tests, consultations, or diagnostic procedures deemed necessary by the physician or licensed health care professional (PLHCP).

c. Before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.

5. Physician or Licensed Health Care Professional

A PLHCP shall perform employee medical evaluations using the medical questionnaire provided in Appendix C of 29 CFR 1910.134 or an initial medical examination that provides the same information as the OSHA medical questionnaire.
II. RESPIRATORY EQUIPMENT

A. Fit Testing

1. Before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee shall be fit tested with the same make, model, style, and size respirator that will be used. Each employee shall pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) prior to initial use of the respirator, whenever a different respirator facepiece (size, style, model, or make) is used, and at least annually thereafter.

2. Each unit shall ensure that an additional fit test is conducted whenever an employee reports, or the unit supervisor/principal investigator, program administrator, or PLHCP makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

If after passing a QLFT or QNFT, the employee subsequently notifies the unit program administrator, supervisor/principal investigator, or PLHCP that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator facepiece and to be retested.

3. The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A and in Section f of the Respiratory Standard.

4. Unit supervisory personnel shall not permit respirators with tight-fitting facepieces to be worn by employees who have: a) facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or b) any condition that interferes with the face-to-facepiece seal or valve function.

5. For all tight-fitting respirators, unit supervisory personnel shall ensure that employees perform a user seal check each time they put on a respirator. The user seal check should employ the procedures in Appendix B-1 of the Respiratory Standard or procedures recommended by the respirator manufacturer that have been demonstrated to be as effective as those in Appendix B-1.

B. Selection

1. A respirator shall be selected based upon the hazard(s) to which an employee is exposed. Selection shall be in accordance with all applicable requirements of American National...

2. The selected respirator should meet the needs of the user. When possible a variety of respirators shall be provided for selection with the final selection being left to the user.

3. Before selecting a respirator, each unit shall:
   a. Identify the toxic substance(s) or hazard(s) present in the work environment and determine under what environmental conditions the respirator is to be used.
   b. List significant properties and effects of the hazard(s) present. (The type of air contaminant including the physical and chemical properties, toxicity, physiological effects, and concentration shall be provided.)
   c. Determine all significant factors associated with the job and the nature of the job operation or process that may affect the respirator’s performance.
   d. Identify the location of the hazardous area with respect to a source of uncontaminated, respirable air.
   e. Determine the period and/or conditions for which respiratory protection will be required.
   f. Identify the functional and physical characteristics of the respirator needed and define its acceptable limitations.
   g. Determine what facilities and personnel are needed for respirator storage and maintenance.
   h. Contact OEHS for assistance in the above areas.

C. Correct Usage

1. In areas where there is a need for respirator usage, employees shall be instructed, at the start of employment, in the proper use of the respirator and shall be advised of its range of usage and limitations.

2. Unit supervisors/principal investigators, with the assistance of OEHS, shall institute a program to ensure that employees have current knowledge of potential exposure hazards associated with normal operations, maintenance procedures, and clean-up methods, and that they know how to care for, maintain, and use respirators.

Each respirator user shall receive training, including demonstrations and practice in how the respirator is to be checked, worn, and adjusted, and how to recognize a proper fit. A qualitative fit test shall be performed on all negative pressure respirators unless a quantitative fit test is specifically required by law. When higher levels of respiratory protection are needed, quantitative fit testing must be performed. Those who conduct the fit testing or oversee respirator users must be properly trained. Any full or half face respirator designed to have a tight facial seal, must be fit tested, whether it is used in a positive or negative pressure mode and whether it is disposable or not.
3. Some employees consider respirators a nuisance and do not use them properly not realizing the dangers involved. In such cases, the responsible supervisor/principal investigator shall again a) explain clearly why the equipment is necessary; b) review its proper use, with an emphasis on proper fit; c) explain the operation of the respirator; d) discipline the employee if such educational efforts fail.

4. Where practical, respirators shall be assigned to individual employees for their exclusive use. The respirator shall be permanently assigned and durably labeled to indicate assigned user. Methods of labeling shall not interfere with use or performance of a respirator. **Any respirator that is used by more than one individual must be disinfected before reuse.** A disinfection/cleaning schedule shall be prepared and kept in place by an assigned employee.

5. Respirators shall not be worn when a good face seal cannot be maintained. If necessary, facial hair must be groomed on a daily basis to provide the proper face seal and to ensure that the seal of the respirator is not affected.

6. The wearing of contact lenses shall not be permitted in any area where half-face respirators are required. If an employee wears corrective glasses or goggles or other personal protective equipment, the equipment shall be worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

7. Routinely used respirators shall be cleaned and disinfected as necessary to ensure proper protection. Under no circumstance shall a respirator be used and then stored in a dirty or unsanitary condition. This is particularly important when the respirator has been used all day. Single use or disposable respirators shall not be used by more than one person or for a period longer than designated.

8. For protection against gases and vapors, an atmosphere-supplying respirator or an air-purifying respirator shall be furnished provided the respirator is equipped with an **end-of service-life indicator** (ESLI) certified by NIOSH.

   If there is no ESLI appropriate for conditions in the worker’s area, the unit, with assistance from OEHS, shall implement a change schedule for canisters or cartridges based on information that can be relied on to ensure that canisters and cartridges are changed before the end of their useful service life.

   In order to establish a change schedule, each unit shall provide OEHS with information on specific work conditions. Using the information provided by the unit, OEHS shall consult with respirator suppliers and manufacturers for guidance and test data, and with regulatory agencies to obtain instructional materials and guidance documents to help develop an appropriate change schedule.

   For particulates, respirator cartridges and filters shall be changed when breathing resistance is noticed.
9. Respirator cartridges, filters, canisters shall be identified by NIOSH/MSHA codes as follows:

<table>
<thead>
<tr>
<th>COLOR</th>
<th>TYPE</th>
<th>HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>S</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>Magenta</td>
<td>HEPA</td>
<td>Dust/Mist/Fumes</td>
</tr>
<tr>
<td></td>
<td>TC-21C-152</td>
<td>Radon/Asbestos</td>
</tr>
<tr>
<td>Black</td>
<td>TC-23-49</td>
<td>Organic Vapors</td>
</tr>
<tr>
<td>Off-White</td>
<td>TC-23C-226</td>
<td>Acid Gases, Formaldehyde</td>
</tr>
<tr>
<td>Yellow</td>
<td>TC-23C-65</td>
<td>Organic Vapors/Acid Gas</td>
</tr>
<tr>
<td>Green</td>
<td>TC-23C-63</td>
<td>Ammonia, Methyl Amine</td>
</tr>
<tr>
<td>Orange</td>
<td></td>
<td>Mercury Vapors</td>
</tr>
<tr>
<td>Olive</td>
<td>TC-23-1292</td>
<td>Formaldehyde</td>
</tr>
<tr>
<td>Red/w Grey Strip</td>
<td></td>
<td>All Above Contaminants</td>
</tr>
<tr>
<td>N Series</td>
<td></td>
<td>Non-Oil Based Particulate</td>
</tr>
<tr>
<td>P Series</td>
<td></td>
<td>N-100, 99, 95 Solid and Liquid Particulate</td>
</tr>
</tbody>
</table>

D. Maintenance, Care, and Storage

1. Each unit requiring respirators shall assign an employee to issue the proper respirator to each employee requiring one. OEHS shall train the designated employee in proper selection, maintenance (including repair or replacement), and use of respirators.

2. Non-disposable respirators issued exclusively to one employee shall be cleaned after each day's use or more often if deemed necessary. Those respirators used by more than one person shall be cleaned and disinfected after each use. Disposable respirators, used cartridges, and dirty filters shall be disposed of in the proper manner as prescribed by OEHS.

3. All parts of the respirator (filters, cartridges, screens, headbands, etc.) must be removed before cleaning. If the respirator is coated with paint or other foreign matter, it should be soaked in a manufacturer recommended cleaning solution until it is clean. Respirators that have no visible accumulation of foreign matter may be cleaned as described in Appendix B of OSHA 29 CFR 1910.134 with warm, soapy water.

4. Filters and cartridges must not be placed in any cleaning solution; doing so would damage their filtering ability. Dirty filters and cartridges must be changed.

5. Disinfection of the respirator is to be done by using a disinfectant approved by the manufacturer and by following manufacturers instructions for using the disinfectant. (See, Appendix B of OSHA 29 CFR 1910.134).

6. Each unit shall ensure that respirators are stored in a clean and convenient location. Respirators shall be kept in a clean, sealed container or bag when not in use. A responsible, trained individual in each unit shall ensure the proper storage of all respirators.

7. Routinely used respirators shall be inspected after each use for worn or deteriorated parts. Inspection shall include checking the tightness of connections and the condition of the face piece, head bands, valves, and connecting tubes. Respirators for emergency use, such as self-
contained devices shall be thoroughly inspected at least once a month. A damaged respirator shall be taken out of service until it is repaired. Only a trained person may repair a respirator.

III. Program Implementation

A. Training

Training shall be conducted by OEHS prior to initial assignment or re-assignment to a respirator area and made available on an annual basis, upon request, or as deemed necessary. Employees and supervisors/principal investigators shall be instructed in respirator usage and limitation. Supervisors/principal investigators shall, on a routine basis, remind employees of training topics. Topics shall include, but are not limited to, the following: 1) how to properly put on and take off the respirator; 2) cleaning, maintenance and storage instructions; 3) limitations and uses of each type of respirator; 4) reasons necessitating a respirator and how improper fit, usage, or maintenance can compromise the equipment; and 5) how to use the respirator effectively in emergency situations.

B. Work Place Surveillance

Appropriate surveillance of work place conditions and exposures shall be conducted by each unit supervisor/principal investigator and verified by OEHS. Follow-up action shall be taken to ensure compliance with the Respiratory Protection Program and all applicable standards. Any changes shall be communicated to the unit.

1. When necessary, OEHS shall conduct appropriate environmental monitoring of the work area. Monitoring results shall determine the actual RPP requirements for each work area.

2. Appropriate medical surveillance shall be conducted based on the monitoring results obtained by the OEHS.

III. PROGRAM IMPLEMENTATION

OEHS is responsible for the development and evaluation of a respiratory protection program for each unit using respirators. Implementation is a combined effort of OEHS and unit supervisors/principal investigators. In addition to identifying the hazards to which an employee may be exposed in order to determine the type of equipment needed, the program shall also consist of training, work place surveillance, medical surveillance, and inspection and evaluation.

A. Training

Training shall be conducted by OEHS prior to initial assignment or re-assignment to a respirator area and made available on an annual basis, upon request, or as deemed necessary. Employees and supervisors/principal investigators shall be instructed in respirator usage and limitation. Supervisors/principal investigators shall, on a routine basis, remind employees of training topics. Topics shall include, but are not limited to, the following: 1) how to properly put on and take off the respirator; 2) cleaning, maintenance and storage instructions; 3) limitations and uses of each type of respirator; 4) reasons necessitating a respirator and how improper fit, usage, or maintenance can compromise the equipment; and 5) how to use the respirator effectively in emergency situations.

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1. When necessary, OEHS shall conduct appropriate environmental monitoring of the work area. Monitoring results shall determine the actual RPP requirements for each work area.

2. Appropriate medical surveillance shall be conducted based on the monitoring results obtained by the OEHS.
3. All monitoring procedures shall be conducted according to good industrial hygiene practices and the applicable NIOSH recommendations, OSHA standard, and/or other recommended regulatory criteria.

4. Monitoring results shall be kept for at least the minimum time required by OSHA. Results shall be made available to an employee as required by law or upon request.

C. Medical Surveillance

1. A medical evaluation shall be provided to determine each worker’s ability to use a respirator before the employee is fit tested or required to use one. The respirator user's medical status shall be evaluated in relation to applicable standards governing the usage, selection, care and maintenance of respiratory protective equipment.

2. The medical examination shall be conducted by a physician or licensed health care professional (PLHCP) in accordance with applicable standards for respiratory protection. The medical examination shall involve use of the medical questionnaire provided in Appendix C of OSHA 29 CFR 1910.134 or an initial medical examination that obtains the same information as the OSHA medical questionnaire.

3. The respirator user's medical status shall be reviewed by a PLHCP on an annual basis to determine whether he/she is capable or fit to wear a respirator. This shall include a pulmonary function test and other tests, as needed, based on the hazard(s) to which an employee is exposed and the activity(s) in which he/she is engaged.

4. A follow up medical examination shall be provided to any employee who answers positive to any of questions 1 through 8 in Section 2, Part A of Appendix C (medical evaluation) and shall include medical tests, consultations or diagnostic procedures deemed necessary by the PLHCP.

5. The medical questionnaire and examinations shall be administered confidentially during the worker’s normal working hours or at a time and place convenient to the employee.

6. The PLHCP shall be provided with: a) the type and weight of the respirator to be used by the worker; b) the duration and frequency of respirator use (including use for rescue and escape); c) the expected physical work effort; d) additional protective clothing and equipment to be worn; and e) temperature and humidity extremes that may be encountered.

7. The unit shall send OEHS a copy of the recommendation it receives from the PLHCP regarding the worker’s ability to use the respirator as it relates to the individual’s specific needs/job responsibilities. The recommendation shall also include any limitations on respirator use related to the medical condition of the employee, or relating to work place conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.

Respiratory Protection / Page 9 / SECTION 15
8. Additional medical evaluations shall be provided when:
   a. an employee reports signs and symptoms that are related to his/her ability to use a respirator;
   b. a PLHCP, supervisor/principal investigator, or program administrator informs the unit that a worker needs to be reevaluated;
   c. information from the respiratory protection program indicates a need for reevaluation;
   d. a change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on the worker.

9. If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the unit's supervisor/principal investigator shall provide a PAPR (powered air purifying respirator) if the PLHCP's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, the PAPR would no longer be required.

10. An employee’s unit shall discontinue an employee’s medical examination when the worker is no longer required to use a respirator.

D. Inspection and Evaluation

OEHS shall conduct periodic inspections to determine compliance with the Respiratory Protection Program. The program shall be updated as needed, but shall be reviewed at least annually by supervisory personnel and, if requested, by OEHS.

1. Supervisors/principal investigators shall check daily to confirm that all phases of the RPP are being followed.

2. Supervisors/principal investigators shall make random, periodic inspections of each respirator to ensure that equipment is being properly used, maintained, stored, and cleaned.

3. Supervisors/principal investigators shall be responsible for ensuring that all required medical examinations are conducted. All costs necessary to carry out this regulation shall be paid by the employee's unit.

4. OEHS shall be responsible for auditing and evaluating the program on a continuing basis to ensure its effectiveness. Any changes in the program due to new regulations, monitoring results, complaints, etc., shall be promptly made and provided to each unit.

5. Records shall be maintained by both the supervisor/principal investigator and OEHS as required by the program and by law.
IV. COMPLIANCE

Departmental Safety Representatives (DSR) help to ensure that the units they represent are in compliance with the Respiratory Standard and Tulane policies and procedures as outlined in the Respiratory Protection Program. DSRs collect and submit to OEHS all training records, inspection reports, assessments, and other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee for consultation.

Unit's should note that grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grant may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handling Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.

End of Text – Return to Section 15, Page 1 Outline
**SHOP (General) Health & Safety Inspection Report**

**Instructions:** Checklist items should be circled "Y" for Yes, "N" for No, or "N/A" for Not Applicable. ✶ For every item circled "N" (No), provide the "Corrective Action." ✶ Once corrected, provide date correction completed.
• Items not listed in this report may be included under Item V "Additional Notes" at the end of this form.

**Distribution:** On completion of the INSPECTION, the inspection report should be signed, the original retained by the department, and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The DSR will take responsibility for forwarding the copy to the Office of Environmental Health & Safety.

---

**INSPECTION CONDUCTED BY (print):** ____________________________________________ Phone: __________
E-mail: __________ Campus: __________ Building: __________ Dept: __________ Floor/Rm Nos: __________

**Date of Inspection:** ____________________________

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. HOUSEKEEPING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Drip pans are clean and not overflowing</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>2. Stock properly stored so as not to present a tripping hazard</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>3. Aisle lines painted around machines</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>4. Work areas have non-slip surface</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>5. Ample space around machines to do work</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>6. Illumination adequate for tasks</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>7. Environmental dust level is low</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>8. Floors and benches free of extraneous materials</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>9. Walkways, stairs, ramps are in good repair</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>10. Floor and other openings are covered; guard rails, toeboards, barricades, warning signs are provided where needed</td>
<td>Y N N/A</td>
<td></td>
</tr>
</tbody>
</table>

| **II. HAND TOOLS** |                   |                 |
| 1. Striking tools free of burred or mushroomed heads | Y N N/A |                 |
| 2. Files equipped with handles | Y N N/A |                 |
| 3. All hand tools in good condition | Y N N/A |                 |
| 4. Hand tools, cutting tools, chisels, knives, etc., sharp and clean | Y N N/A |                 |

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16F-OEHS /Tulane (Rev. 8/03) Inspection & Compliance
### III. ELECTRICAL
1. Junction boxes have circuits identified | Y | N | N/A |
2. Equipment properly grounded | Y | N | N/A |
3. All electrical plugs equipped with three prongs (i.e., grounded) | Y | N | N/A |
4. Extension cords are prohibited (except temporary use) | Y | N | N/A |
5. Multiple outlet adapters with circuit protection are used only for computer equipment | Y | N | N/A |
6. Cords and outlets safe (not cracked, broken or frayed) | Y | N | N/A |

### IV. MACHINES (General)
1. All machines protected by power transmission guards (where applicable) | Y | N | N/A |
2. If answer to above is yes, are guards in place | Y | N | N/A |
3. Lathes equipped with see-through shields to protect eyes | Y | N | N/A |
4. Drill presses protected by spindle sleeve guards | Y | N | N/A |
5. Drill press bits protected | Y | N | N/A |
6. Machines free from unusual vibration | Y | N | N/A |
7. Machines properly grounded | Y | N | N/A |
8. Pulleys, belts, gear and shafts guarded | Y | N | N/A |
9. High operation noise not present | Y | N | N/A |
10. Equipment anchored to the floor | Y | N | N/A |

### V. MACHINE CONTROLS
1. Cutoffs in place that allow operators to cut power without leaving point of operation | Y | N | N/A |
2. Lockout system used to prevent machines out of order or being repaired from being accidentally energized | Y | N | N/A |
### VI. HAND FED CIRCULAR TABLE SAWS

1. Saw guarded by a hood | Y | N | N/A |
2. Hood completely encloses that portion of the saw above the table | Y | N | N/A |
3. Hood automatically adjusts itself to the thickness of the stock and remains in contact with it while being sawed | Y | N | N/A |
4. The guard has spreader (or other effective devise) to keep material from squeezing saw | Y | N | N/A |
5. The guard is in good condition | Y | N | N/A |

### VII. RADIAL SAW AND SLIDING OUTOFF SAWS

1. Hood completely encloses the upper half of the saw arbor end | Y | N | N/A |
2. The hood deflects sawdust away from the operator | Y | N | N/A |
3. The sides of the lower, exposed portion of the blade guarded to the full diameter of the blade | Y | N | N/A |
4. The guard automatically adjusts itself to the thickness of the stock | Y | N | N/A |
5. An adjustable stop is provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in respective operations | Y | N | N/A |
6. The front end of the unit is slightly higher than the rear to allow the cutting head to return gently to the starting position when released | Y | N | N/A |

### VIII. BANDSAWS

1. All portions of the saw blade are enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the cable | Y | N | N/A |
2. Band wheels are fully encased | Y | N | N/A |
3. The front and back of the band wheels are enclosed | Y | N | N/A |
4. The guard for the portion of the blade between the sliding guide and the upper saw-wheel guard protects the saw blade at the front and outer side | Y | N | N/A |
## VIII. BANDSAWS (cont’d)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Action</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>The portion of guard noted in Item 4 is self-adjusting to raise and lower with the guide</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The saw is provided with a tension control device</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The feed rolls are properly protected</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## IX. JOINTERS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Action</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The knife projection extends less than 1/8&quot; beyond the cylindrical bo of the head</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The jointers have automatic guards (&quot;leg of mutton&quot;)</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The automatic guard covers all portions of the head on the working side of the fence</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The guard effectively keeps the operator’s hand from coming in contact with the revolving knives</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The guard automatically adjusts itself to cover the unused portion of the head and remains in contact with the material at all times</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Push sticks are available</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## X. BENCH GRINDERS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Action</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Safety guards cover the spindle end and nut flange projections</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The guard is mounted so as to maintain proper alignment with the wheel</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The grinder’s are equipped with flanges</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The maximum space between the wheel and the workrest is less than 1/8&quot;</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The grinder is securely fastened to bench or floor stand</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The wheel is adequately dressed</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The bench grinder is equipped with a glass shield</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The shield is clean and in good condition</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Goggles are available at the grinder</td>
<td>Y</td>
<td>N</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHECKLIST ITEMS</td>
<td>CORRECTIVE ACTION</td>
<td>Correction Date</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X. BENCH GRINDERS (cont’d)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. A caution sign reminding operators to wear proper eye protection is posted at the grinder</td>
<td>Y N N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>XI. MISCELLANEOUS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appropriate warning signs are posted</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>2. Fire extinguishers are available in working order and bear a current inspection date (within 1 month)</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>3. Proper and sufficient waste containers are available</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>4. Safety glasses required during machine operation are provided</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>5. Air pressure used for bench or machine cleaning is set at or reduced to 30 psi or lower</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>6. Brushes are available for cleaning bench or machine</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>7. Floor or box fans less than 7 feet from floor (for cooling) have guards front and back with opening no more than ½”</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>8. Ladders are in good condition including safety feet and are properly designed for task. (i.e., no metal ladders for electrical works)</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>9. Scaffolds are of sturdy construction, provided with guard rails and toeboards</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>10. Cranes and hoists are properly maintained, inspected in so far as cable condition, clamps, safety hooks, and power lines are concerned</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>11. Proper personal protective devices such as hard hats, safety glasses, goggles, face shields, gloves, respirators, hearing protection, etc., are provided and in good condition</td>
<td>Y N N/A</td>
<td></td>
</tr>
</tbody>
</table>
### XII. WELDING

1. **General:**
   
   a. Fire resistant curtains or suitable shields are available and properly used
      
      | Y | N | N/A |
      |---|---|-----|

   b. Appropriate personal protective equipment is available and used, i.e., eye, face, ear protection, gloves, aprons, sleeves, etc.
      
      | Y | N | N/A |
      |---|---|-----|

   c. Proper ventilation is provided for welding operations, both fixed for shop welding and portable for on site welding
      
      | Y | N | N/A |
      |---|---|-----|

2. **Oxy-Acetylene Welding:**
   
   a. All cylinders are well removed from sources of heat
      
      | Y | N | N/A |
      |---|---|-----|

   b. All cylinders are stored in assigned places and properly secured
      
      | Y | N | N/A |
      |---|---|-----|

   c. All stored cylinders are protected by valve caps
      
      | Y | N | N/A |
      |---|---|-----|

   d. “No smoking” signs are posted in the area
      
      | Y | N | N/A |
      |---|---|-----|

   e. The stored cylinders of oxygen are separated from the other gases by at least 20’ (or by 5’ barrier having at least ½ hour fire resistance rating)
      
      | Y | N | N/A |
      |---|---|-----|

   f. All cylinders, valves, couplings, regulators and hoses are free from oil or grease
      
      | Y | N | N/A |
      |---|---|-----|

   g. The hose, regulator and torch are in good condition
      
      | Y | N | N/A |
      |---|---|-----|

   h. Flashback arrestors are installed on each cylinder set up for use
      
      | Y | N | N/A |
      |---|---|-----|

3. **Arc-Welding:**
   
   a. The frame of the welding machine is adequately grounded
      
      | Y | N | N/A |
      |---|---|-----|

   b. All ground connectors are mechanically strong and adequate for required current
      
      | Y | N | N/A |
      |---|---|-----|

   c. The proper switching equipment for shutting down the machine is provided and in good condition
      
      | Y | N | N/A |
      |---|---|-----|

   d. Cables within 10 ft of holder are in good condition (no splices)
      
      | Y | N | N/A |
      |---|---|-----|

   e. Electrode holders are in good condition (no cracks, broken pieces, or wear points)
      
      | Y | N | N/A |
      |---|---|-----|
XIII. ADDITIONAL NOTES

The person conducting this inspection, as indicated on the front page of this report, should provide his/her signature below.

________________________________________
SIGNATURE OF INSPECTOR

NOTE:

Please remember that inspection reports are to be submitted QUARTERLY to the Departmental Safety Representative (DSR) in charge of the area. The DSR will then forward the report to the Office of Environmental Health & Safety.
**VEHICLE REPAIR SHOP Health & Safety Inspection Report**

**Instructions:** Checklist items should be circled “Y” for Yes, “N” for No, or “N/A” for Not Applicable. ✦ For every item circled “N” (No), provide the “Corrective Action.” ✦ Once corrected, provide date correction completed.

- Items not listed in this report may be included under Item V “Additional Notes” at the end of this form.

**Distribution:** On completion of the INSPECTION, the inspection report should be signed, the original retained by the department, and a copy provided to the Departmental Safety Representative (DSR) in charge of the area. The DSR will take responsibility for forwarding the copy to the Office of Environmental Health & Safety.

---

**INSPECTION CONDUCTED BY (print):**

**Phone:** ____________________________

**E-mail:** ____________________________

**Campus:** ____________________________

**Building:** ____________________________

**Dept:** ____________________________

**Floor/Rm Nos:** ____________________________

**Date of Inspection:** ____________________________

---

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. VENTILATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Shop has system for exhausting toxic vapors such as carbon monoxide and other solvents to the outside</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>2. Floor fans are covered front and back with guards with opening not more than 1/2&quot;</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td><strong>II. TIRE OPERATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Tire airing cage is available and used when mounting tires requiring locking rings</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>2. When tires are mounted outside of shop, locking rings are chained to tire</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>3. Proper friable asbestos control equipment is used when changing brake shoes containing asbestos</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td><strong>III. SERVICE AND MAINTENANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Jacks are in good condition</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>2. Battery chargers are in good condition</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>3. Hand carts are available for moving batteries</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>4. Acid carboys are available</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>5. Sparkplug cleaner is in good condition</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>6. Parts are cleaned in dip tank</td>
<td>Y N N/A</td>
<td></td>
</tr>
<tr>
<td>7. Dip tank has fusible link that is operable (allows top to close in the event of fire)</td>
<td>Y N N/A</td>
<td></td>
</tr>
</tbody>
</table>
### III. SERVICE AND MAINTENANCE (cont’d)

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Combustible or flammable solvents for parts cleaning are used with proper ventilation</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>9. Hand tools are in good condition, (hammers, wrenches, striking tools, etc.)</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>10. Power tools are in good condition (electrical cords, air hoses, etc.)</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>11. The chain hoist is inspected regularly and is in good condition</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>12. Grinder wheel is guarded (spindle end and nut covered)</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>13. Grinder workrest is adjusted to no more than 1/8” from wheel</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>14. The grinder is securely fastened to bench or floor stand</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### IV. GENERAL

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gasoline is not used to clean parts</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. Work bays and aisles are defined by painted lines on floors</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>3. Air pressure used for cleaning is discharged at no more than 30 psi</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>4. Personal protective equipment is available (face, skin, respiratory protection) as needed</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>5. First aid kit is available</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### V. HOUSEKEEPING

<table>
<thead>
<tr>
<th>CHECKLIST ITEMS</th>
<th>CORRECTIVE ACTION</th>
<th>Correction Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At time of inspection, floors were free of oil and grease</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. Absorbent compound is available for covering oil and grease spots</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
<tr>
<td>3. Work benches were neat and clean</td>
<td>Y N N/A</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
VI. FIRE PROTECTION
1. The shop is equipped with A-B-C type fire extinguisher(s)  
   Y N N/A

2. Extinguisher(s) appropriately maintained and provided with up-to-date tag (within 1 month)  
   Y N N/A

3. Approved safety cans available for disposing of oily rags and flammable liquids  
   Y N N/A

VII. ADDITIONAL NOTES

The person conducted the inspection, as indicated on the front page of this report, should provide his/her signature below.

__________________________________________
SIGNATURE OF INSPECTOR

NOTE:

Please remember that inspection reports are to be submitted QUARTERLY to the Departmental Safety Representative (DSR) in charge of the area. The DSR will then forward the report to the Office of Environmental Health & Safety.
**Tulane University - First Report of Occupational Injury/Illness**

<table>
<thead>
<tr>
<th>1. Date of Report:</th>
<th>2. Date of Injury:</th>
<th>3. Normal Starting Time on Day of Accident:</th>
<th>4. Date Employee Return to Work:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. If Fatal injury, Give Date of Death:</th>
<th>6. Date Employer Knew of Injury:</th>
<th>7. Date Disability Began:</th>
<th>8. Last Full Day Paid-Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Print Employee:(First/Middle/Last)</th>
<th>10. Social Security Number</th>
<th>11. Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Married</th>
<th>Single</th>
<th>Separated</th>
<th>Widowed</th>
<th>16. Employee Email Address (Tulane/Personal):</th>
<th>17. Date of Hire:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>22. Exact Location: (Building, floor, room number, etc. If off premises: street, address, city &amp; state)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

23. What Was The Employee Doing When injured? (Be specific. If using tools or equipment or handling material—name them and tell what he was doing with them).

24. How Did Injury Occur? (Describe fully the events which resulted in injury or disease. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to injury or disease).

<table>
<thead>
<tr>
<th>25. Mechanical Defect: Yes</th>
<th>No (Describe Above)</th>
</tr>
</thead>
</table>

26. Unsafe Act Defect: Yes | No

27. Nature and Location of injury or Disease (Describe fully, include parts of body affected):

28. Attending Physician and Address (If Hospital involved indicate)

29. Employer: TULANE UNIVERSITY

30. Person Completing This Report:

31. Employer's Address-Include Parish and Zip Code: UPTOWN \_ \_ TUHSC \_ \_ TNPNC

32. Employer's Telephone Number:

33. Employer's Mailing Address If Different Than Above:

34. Nature of Business-Type of Mfg., Trade, Construction, Service, etc.:

EDUCATION AND HEALTH CARE SERVICES

INSTRUCTIONS:

- IF SERIOUS INJURY, ILLNESS OR DEATH OCCURS, CONTACT TULANE UNIVERSITY OFFICE OF ENVIRONMENTAL HEALTH & SAFETY AT 504-861-6486.
- IT IS IMPORTANT THAT ALL INFORMATION IS COMPLETED ON THIS FORM. BOTH SIDES OF YELLOW REVERSE FORM MUST BE COMPLETED.

PRINT DIRECTOR/SUPERVISOR'S NAME: PHASE NUMBER: DIRECTOR OR SUPERVISOR'S SIGNATURE: ATE SIGNED:

DISTRIBUTION OF FORM:

- Original to Tulane University, Env Health & Safety (Workers' Comp Section) 1430 Tulane Ave, Bx TW16, New Orleans, LA 70112-2699, Worker's Comp. Fax No. 504 988-2196 / Direct No. 504 988-2869; Employee's Supervisor; Employee; Health Care Provider (HCP).

Continued on reverse side - 18F-OEHS (REV. 1/09) INJURY/ILLNESS
(Note: Complete the following by checking the appropriate blocks or filling in space provided below.)

**EVENT CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Off chair, furniture</td>
</tr>
<tr>
<td>102</td>
<td>Off dock, opening, excavation</td>
</tr>
<tr>
<td>103</td>
<td>Off ladder, scaffold</td>
</tr>
<tr>
<td>104</td>
<td>Off machinery, equipment</td>
</tr>
<tr>
<td>105</td>
<td>Off vehicle</td>
</tr>
<tr>
<td>106</td>
<td>Off high place</td>
</tr>
<tr>
<td>107</td>
<td>On stairs, steps-insides</td>
</tr>
<tr>
<td>108</td>
<td>On other flat surfaces-insides</td>
</tr>
<tr>
<td>109</td>
<td>On stairs, steps-outsdoors</td>
</tr>
<tr>
<td>110</td>
<td>On paved surfaces-outsdoors</td>
</tr>
<tr>
<td>111</td>
<td>On loose ground-cover-outsdoors</td>
</tr>
<tr>
<td>112</td>
<td>On flat surface-outsdoors</td>
</tr>
<tr>
<td>201</td>
<td>By airborne dust particles</td>
</tr>
<tr>
<td>202</td>
<td>By another person, object being held</td>
</tr>
<tr>
<td>203</td>
<td>By chips/particles from use of powered hand tools, machinery or equipment</td>
</tr>
<tr>
<td>204</td>
<td>By chips/particles from use of non-powered hand tools</td>
</tr>
<tr>
<td>205</td>
<td>By object - bl own of f pressurized system</td>
</tr>
<tr>
<td>206</td>
<td>By object - broken off, vibrated loose, mobilized</td>
</tr>
<tr>
<td>207</td>
<td>By object - collapse, cave-in</td>
</tr>
<tr>
<td>208</td>
<td>By object - d ropped, released by self</td>
</tr>
<tr>
<td>209</td>
<td>By object - from e xplosion, over-pressure</td>
</tr>
<tr>
<td>210</td>
<td>By object - dropped, released or thrown by another person</td>
</tr>
<tr>
<td>211</td>
<td>By - other</td>
</tr>
<tr>
<td>212</td>
<td>By against handtool, non-powered</td>
</tr>
<tr>
<td>213</td>
<td>By against hand tool, powered</td>
</tr>
<tr>
<td>214</td>
<td>By against moving equipment/machinery</td>
</tr>
<tr>
<td>215</td>
<td>Against stationary, sharp object</td>
</tr>
<tr>
<td>216</td>
<td>Against - other</td>
</tr>
<tr>
<td>217</td>
<td>Caught i n moving machinery, equipment</td>
</tr>
<tr>
<td>218</td>
<td>Caught, pinched between objects</td>
</tr>
<tr>
<td>219</td>
<td>Needle - self inflicted</td>
</tr>
<tr>
<td>220</td>
<td>Needle - waste handling</td>
</tr>
<tr>
<td>221</td>
<td>Other, Contact with Material Condition (touching, breathing, swallowing, absorbing)</td>
</tr>
</tbody>
</table>

**Falls, Slips, Trips (Off, On, Over)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Chemicals - corrosive, irritating substances in, around or from process equipment</td>
</tr>
<tr>
<td>302</td>
<td>Chemicals - corrosive, irritating substances w hile ha ndling or r transferring bulk quantity</td>
</tr>
<tr>
<td>303</td>
<td>Chemicals - corrosive, irritating substances in small laboratory quantity</td>
</tr>
<tr>
<td>304</td>
<td>Commercial cleaning materials</td>
</tr>
<tr>
<td>305</td>
<td>Chemicals - other</td>
</tr>
<tr>
<td>306</td>
<td>Electricity, power hand tools</td>
</tr>
<tr>
<td>307</td>
<td>Electricity - other</td>
</tr>
<tr>
<td>308</td>
<td>Exposure to natural elements</td>
</tr>
<tr>
<td>309</td>
<td>Fire flame, intense heat</td>
</tr>
<tr>
<td>310</td>
<td>Hot, cold surface</td>
</tr>
<tr>
<td>311</td>
<td>Unpressurized hot liquid hot material</td>
</tr>
<tr>
<td>312</td>
<td>Pressurized hot liquid/gas</td>
</tr>
<tr>
<td>313</td>
<td>Pressurized cold liquid/gas</td>
</tr>
<tr>
<td>314</td>
<td>Noise</td>
</tr>
<tr>
<td>315</td>
<td>Radiation</td>
</tr>
<tr>
<td>316</td>
<td>Smoke, gas</td>
</tr>
<tr>
<td>317</td>
<td>Welding flash</td>
</tr>
<tr>
<td>318</td>
<td>Other material or condition</td>
</tr>
<tr>
<td>319</td>
<td>Biological agent</td>
</tr>
<tr>
<td>320</td>
<td>Other</td>
</tr>
</tbody>
</table>

**NATURE OF INJURY CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>501</td>
<td>Animal, insects, plants</td>
</tr>
<tr>
<td>502</td>
<td>Public transportation</td>
</tr>
<tr>
<td>503</td>
<td>Sports activity</td>
</tr>
<tr>
<td>504</td>
<td>Vehicle passenger, driver</td>
</tr>
<tr>
<td>505</td>
<td>Miscellaneous</td>
</tr>
</tbody>
</table>

**Injury**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Amputation</td>
</tr>
<tr>
<td>102</td>
<td>Bite, sting</td>
</tr>
<tr>
<td>103</td>
<td>Bruise, contusion</td>
</tr>
<tr>
<td>104</td>
<td>Burn - hot, cold, chemical, scald</td>
</tr>
<tr>
<td>105</td>
<td>Concussion, unconscious</td>
</tr>
<tr>
<td>106</td>
<td>Cut, laceration</td>
</tr>
<tr>
<td>107</td>
<td>Exhaustion, heat stroke</td>
</tr>
<tr>
<td>108</td>
<td>Electric shock</td>
</tr>
<tr>
<td>109</td>
<td>Irritation, other</td>
</tr>
<tr>
<td>110</td>
<td>Exposure</td>
</tr>
<tr>
<td>111</td>
<td>Foreign body, sliver, dust etc.</td>
</tr>
<tr>
<td>112</td>
<td>Fracture, crush, dislocated</td>
</tr>
<tr>
<td>113</td>
<td>Internal injury, hernia, heart</td>
</tr>
<tr>
<td>114</td>
<td>Loss of senses, faculties</td>
</tr>
<tr>
<td>115</td>
<td>Puncture</td>
</tr>
<tr>
<td>116</td>
<td>Scrape, scratch, abrasion</td>
</tr>
<tr>
<td>117</td>
<td>Sprain, strain, torn</td>
</tr>
<tr>
<td>118</td>
<td>Suffocation, drowning</td>
</tr>
<tr>
<td>119</td>
<td>Dermatitis (skin rash)</td>
</tr>
<tr>
<td>120</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Illness**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Skin disease, disorder</td>
</tr>
<tr>
<td>202</td>
<td>Lung problem, dust related</td>
</tr>
<tr>
<td>203</td>
<td>Lung problem, toxic agent related</td>
</tr>
<tr>
<td>204</td>
<td>Poisoning</td>
</tr>
<tr>
<td>205</td>
<td>Disorders due to physical agent (other than toxic agents)</td>
</tr>
<tr>
<td>206</td>
<td>Disorders as sociated w ith repeated trauma</td>
</tr>
</tbody>
</table>

**PART OF BODY CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Scalp</td>
</tr>
<tr>
<td>302</td>
<td>Skull</td>
</tr>
<tr>
<td>303</td>
<td>Ears (R/L/Both)</td>
</tr>
<tr>
<td>304</td>
<td>Eyes (R/L/Both)</td>
</tr>
<tr>
<td>305</td>
<td>Face (R/L/Both)</td>
</tr>
<tr>
<td>306</td>
<td>Nose</td>
</tr>
<tr>
<td>307</td>
<td>Mouth/Teeth</td>
</tr>
<tr>
<td>308</td>
<td>Neck</td>
</tr>
<tr>
<td>309</td>
<td>Whole Head</td>
</tr>
<tr>
<td>310</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Arm/Shoulder**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Shoulder (R/L/Both)</td>
</tr>
<tr>
<td>402</td>
<td>Upper Arm (R/L/Both)</td>
</tr>
<tr>
<td>403</td>
<td>Elbow (R/L/Both)</td>
</tr>
<tr>
<td>404</td>
<td>Forearm (R/L/Both)</td>
</tr>
<tr>
<td>405</td>
<td>Wrist (R/L/Both)</td>
</tr>
<tr>
<td>406</td>
<td>Hand (R/L/Both)</td>
</tr>
<tr>
<td>407</td>
<td>Fingers (R/L/Both)</td>
</tr>
<tr>
<td>408</td>
<td>Whole Arm (R/L/Both)</td>
</tr>
<tr>
<td>409</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Toro**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>501</td>
<td>Chest/Ribs</td>
</tr>
<tr>
<td>502</td>
<td>Back - Muscles</td>
</tr>
<tr>
<td>503</td>
<td>Back - Skeletal/Nervous</td>
</tr>
<tr>
<td>504</td>
<td>Abdomen</td>
</tr>
<tr>
<td>505</td>
<td>Groin</td>
</tr>
<tr>
<td>506</td>
<td>Hip (R/L/Both)</td>
</tr>
<tr>
<td>507</td>
<td>Buttocks</td>
</tr>
<tr>
<td>508</td>
<td>Whole Torso</td>
</tr>
<tr>
<td>509</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Leg**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>601</td>
<td>Thigh (R/L/Both)</td>
</tr>
<tr>
<td>602</td>
<td>Knee (R/L/Both)</td>
</tr>
<tr>
<td>603</td>
<td>Shin, Calf (R/L/Both)</td>
</tr>
<tr>
<td>604</td>
<td>Ankle (R/L/Both)</td>
</tr>
<tr>
<td>605</td>
<td>Foot (R/L/Both)</td>
</tr>
<tr>
<td>606</td>
<td>Toe</td>
</tr>
<tr>
<td>607</td>
<td>Whole Leg (R/L/Both)</td>
</tr>
</tbody>
</table>

**FI cuity/System**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>Hearing</td>
</tr>
<tr>
<td>702</td>
<td>Vision</td>
</tr>
<tr>
<td>703</td>
<td>Smell</td>
</tr>
<tr>
<td>704</td>
<td>Taste</td>
</tr>
<tr>
<td>705</td>
<td>Smell</td>
</tr>
<tr>
<td>706</td>
<td>Respiratory</td>
</tr>
<tr>
<td>707</td>
<td>Circulatory</td>
</tr>
<tr>
<td>708</td>
<td>Digestive</td>
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<tr>
<td>709</td>
<td>Nervous</td>
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<tr>
<td>710</td>
<td>Other</td>
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**TASK ASSIGNMENT CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Working regular assigned task.</td>
</tr>
<tr>
<td>02</td>
<td>Working at other than regular task.</td>
</tr>
<tr>
<td>03</td>
<td>Other</td>
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</table>

**CONTRIBUTING ENVIRONMENTAL FACTOR CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Sound level</td>
</tr>
<tr>
<td>1</td>
<td>Weather condition</td>
</tr>
<tr>
<td>03</td>
<td>Illumination</td>
</tr>
<tr>
<td>04</td>
<td>Working surface/facility layout condition</td>
</tr>
<tr>
<td>05</td>
<td>Flammable liquid/solid exposure</td>
</tr>
<tr>
<td>06</td>
<td>Chemical action/reaction exposure</td>
</tr>
<tr>
<td>07</td>
<td>Materials handling equipment/method</td>
</tr>
<tr>
<td>08</td>
<td>Gas/vapor/mist/fume/smoke/dust condition</td>
</tr>
<tr>
<td>09</td>
<td>Overhead moving/falling object action</td>
</tr>
<tr>
<td>10</td>
<td>Flying object action</td>
</tr>
<tr>
<td>11</td>
<td>Temperature above or below tolerance level</td>
</tr>
<tr>
<td>12</td>
<td>Radiation condition</td>
</tr>
<tr>
<td>13</td>
<td>Pinch point action</td>
</tr>
<tr>
<td>14</td>
<td>Catch point/puncture action</td>
</tr>
<tr>
<td>15</td>
<td>Shear point action</td>
</tr>
<tr>
<td>16</td>
<td>Squeeze point action</td>
</tr>
<tr>
<td>17</td>
<td>Overpressure/underpressure condition</td>
</tr>
<tr>
<td>18</td>
<td>Poor housekeeping</td>
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<tr>
<td>19</td>
<td>Other</td>
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**CONTRIBUTING HUMAN FACTOR CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Misjudgement of hazardous situation</td>
</tr>
<tr>
<td>02</td>
<td>No personal protective equipment used</td>
</tr>
<tr>
<td>03</td>
<td>No s pecial pr otective clothing/appropriate attire</td>
</tr>
<tr>
<td>04</td>
<td>Malfunction of procedure for securing operation o r warning o f hazardous situation</td>
</tr>
<tr>
<td>05</td>
<td>Distracting actions</td>
</tr>
<tr>
<td>06</td>
<td>Equipment in use not appropriate for operation or process</td>
</tr>
<tr>
<td>07</td>
<td>Malfunction of neuro-muscular system</td>
</tr>
<tr>
<td>08</td>
<td>Malfunction of perception system with respect to task environment</td>
</tr>
<tr>
<td>09</td>
<td>Safety devices removed or inoperative</td>
</tr>
<tr>
<td>10</td>
<td>Operational position not appropriate for task</td>
</tr>
<tr>
<td>11</td>
<td>Procedure for handling materials not appropriate for task</td>
</tr>
<tr>
<td>12</td>
<td>Protective equipment in use</td>
</tr>
<tr>
<td>13</td>
<td>Malfunction of procedure for lock-out or tag-out</td>
</tr>
<tr>
<td>14</td>
<td>Procedure to o com plete t ask not appropriate</td>
</tr>
<tr>
<td>15</td>
<td>Other</td>
</tr>
</tbody>
</table>

**COMMENTS OR RECOMMENDATIONS TO HELP PREVENT FUTURE OCCURRENCES OF SIMILAR PROBLEMS:**

---

---
Print Employee's Name

Date of Injury: ________________

Note: If more space is needed use an extra sheet of paper as an attachment.
RESPIRATORY HAZARD ASSESSMENT

Employee Name: ___________________________ Date: __________________

Campus: ___________________________ Department: ___________________________ Room: __________________

Job Classification/Title: ___________________________

HAZARD(S)
Chemical Hazard(s): __________________________________________

Chemical State: __________________________________________

Other Hazards: __________________________________________

PROCESS/PROCEDURE
Process/procedure application: __________________________________________

Quantity used: ___________________________ Concentration used: ___________________________

Time required to conduct process/procedure: ___________________________

Area in which process/procedure is performed: __________________________________________

VENTILATION
Is there ventilation? Yes____ No____ Type of ventilation: ___________________________________________

Work Area Conditions: __________________________________________

RESPIRATOR USAGE
Personal exposure monitoring conducted? Yes____ No____ Respirator required? Yes____ No____

Type of respirator required: __________________________________________

Respirator cartridge change out system: __________________________________________

Was employee trained in respirator use? Yes____ No____

Training conducted by: __________________________________________

MEDICAL EVALUATION
Was a medical evaluation conducted? Yes____ No____

Medical problem(s) that may interfere with respirator use: __________________________________________

FIT TESTING
Was employee fit-tested? Yes____ No____ Date of fit-testing: ___________________________

Fit-Testing Conducted by: __________________________________________

19F-OEHS /Tulane (Rev. 8/03) Respiratory Safety
SECTION 20
ANIMALS

TULANE UNIVERSITY
ENVIRONMENTAL HEALTH
AND SAFETY
POLICIES AND
PROCEDURES MANUAL
REVISION DATE: 9/1/03

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I. Animals in Research (p.1)
   A. General Guidelines
   B. Injury/Illness Reporting
   C. Compliance
II. Humane Care of Laboratory Animals
    with Use of Biohazardous Agents
    and Recombinant DNA (p.3)
III. Animals on Campus (p.3)
IV. Vivarium Security (p.4)

ADDITIONAL READING

Biological Safety Section 22
Emergency Response Section 1
Hazard Communication Section 12
Hazardous Materials Safety Section 29
Injury/Illness Reporting Section 4
Personal Protective Equipment Section 14

REFERENCED FORMS

Animal Handler Health Surveillance Program
Risk Assessment and History 26F-OEHS
First Report of Occupational Injury/Illness 18F-OEHS

I. ANIMALS IN RESEARCH

All faculty, staff, students, and visiting scholars must comply with applicable provisions of the United States Department of Agriculture, Animal Welfare Act and other federal, state, and local standards and regulations, and University policies and procedures relating to laboratory animals (living or dead). Failure to comply may result in a suspension of the privilege to use laboratory animals in teaching and research activities.
A. **General Guidelines**

1. Use freight elevators when transporting laboratory animals. If possible, keep animals caged or restrained during transportation in buildings.

2. Animal carcasses shall be removed from the Medical School by a disposal contractor. Contact the vivarium for instructions.

3. Radioactive animal carcasses require special labeling, packaging, and disposal procedures that must be handled through the **Office of Environmental Health & Safety** (OEHS). Contact OEHS for instructions.

4. Except as approved by the vivarium director, keep research animals in the vivarium area when they are not actively involved in a research experiment.

5. All personnel (technicians to principal investigators) who handle or have substantial contact with animals in research or teaching must participate in the **Animal Handler Health Surveillance Program** prior to commencement of work involving animals. Contact OEHS for details. *(See, Form 26F-OEHS, Animal Handler Health Surveillance Program Risk Assessment and History, in Appendix E of this manual.)*

B. **Injury/Illness Reporting**

Any job related injury or illness resulting from contact with animals must be reported and treated immediately. Injured/ill personnel must complete a **First Report of Occupational Injury/Illness form** *(Form 18F-OEHS located in Appendix E of this manual)* obtain his/her supervisor’s/principal investigator’s signature, and present the form to the **Occupational Medicine Clinic** (OMC) or the **Emergency Room** at **Tulane University Hospital and Clinic** (TUHC), or the facility of choice, at the time of treatment. The form should then be sent to the **Office of Risk Management** (original) and OEHS (copy) within 24 hours. All injuries involving bloodborne pathogens must be treated at TUHC, except that injuries occurring at the Primate Center should be treated by the University’s current medical provider on the Northshore.

C. **Compliance**

**Departmental Safety Representatives** (DSR) help to ensure that the units they represent are in compliance with regulatory standards and Tulane University policies and procedures regarding animal handling. *(A unit is a department, section, center, or program, or any number or configuration of these components.)* DSRs also collect and submit to OEHS all training documentation, PPE assessments, inspection reports, and other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the **Unit Head**.
If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee (Operations Committee) for consultation.

Units should note that grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.

II. Humane Care of Laboratory Animals with Use of Biohazardous Agents and Recombinant DNA

This section will be taken from Section 22, Biological Safety, when it becomes available.

III. Animals on Campus

Health and safety issues associated with bringing “animal companions” into University buildings include incidents such as biting and threatening of building occupants, housekeeping problems because of urine and feces left in corridors and rooms, dander causing allergic responses to susceptible individuals, possible tick and flea infestation/bites, offensive odors, and noise.

University policy prohibits the presence of animals in Tulane buildings other than those animals used in research, or as escort animals for the physically impaired. Violations of this policy shall be brought to the attention of the Operations Committee and, if needed, to the University's Environmental Health & Safety Policy Committee (Policy Committee) for corrective action. Security shall be authorized to investigate such occurrences, inform the parties concerned of University policy, ensure that corrective action has been taken, and report trends to the Operations Committee.

Any person bringing “animal companions” onto University grounds (not in buildings) must obey applicable city leash laws and properly clean-up after their animals. Tulane facilities cannot be used as a shelter for pet companions during hurricanes or other such emergencies without the permission of Tulane administration.
IV. VIVARIUM SECURITY

The University conducts numerous research projects with animals, particularly at TUHSC and Tulane National Primate Research Center, and has become the focus of local as well as national animal rights groups. In order to protect fellow University employees and property, each employee should become especially vigilant whenever a situation arises that deals with the University's use of animals in research. Specific instances to be aware of are:

- Persons asking directions to the vivarium, or inquiring as to where animals are housed.
- Anyone with a camera who is not accompanied by security or a public relations representative.
- A person who appears "lost" in locations adjacent to the vivarium, yet who does not ask for directions.
- Anyone who says he/she is looking for a lost pet and needs directions to the vivarium.
- Anyone who randomly asks questions about research involving animals.

Should any of the above situations arise, refer the person(s) to Security. If the person ignores directions to the security desk or office, note the direction the person(s) takes and telephone Security immediately.

End of Text – Return to Section 20, Page 1 Outline
WMSD HAZARD REPORT  
(Work-Related Musculoskeletal Disorder (WMSD))

Reporting Person: ___________________________  Date: ___________________

Telephone: ___________  Fax: ___________  Department: ___________________________

Department Head: ___________________________

Telephone: ___________________________  Fax: ___________________________

Location of Hazard:  
(campus, building, floor, room #) ___________________________

Description of Present or Potential Hazard: ___________________________

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Unless apparent in the above description, explain how this creates a hazard?

________________________________________________________________________
________________________________________________________________________

How many people are affected by the hazard? ________  How long has it existed? ________

Has the hazard been previously reported?  Y___N___

If “yes,” when was it reported? ___________________________  To whom? ___________________________

Was any corrective action taken?  Y___N___

If “yes,” describe corrective measures: ___________________________

________________________________________________________________________

How did you become aware of the hazard?  ___________________________

Are you aware of any injury resulting from this hazard?  Y___N___

If “yes,” describe injuries: ___________________________


If “yes,” name of injured/ill person: ___________________________  Date report filed: ___________

How would you suggest correcting the hazard? ___________________________

________________________________________________________________________

(For OEHS Use Only)

Fax or phone this report to:  
Tulane University  
Office of Environmental Health & Safety  
Fax: (504) 584-1693, Phone: (504) 588-5486  

DATE RECEIVED:  
CONTROL NO:  

Fax or phone this report to:  
Tulane University  
Office of Environmental Health & Safety  
Fax: (504) 584-1693, Phone: (504) 588-5486
SECTION CONTENTS

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   B. Responsibilities

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   B. Sampling
   C. Assessment
   D. Operations & Maintenance

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   B. Emergency Asbestos Projects

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   B. Initial Steps
   C. Removal
   D. Work Site Decontamination
   E. Air Monitoring
   F. Waste Disposal

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   B. Criteria for Determining Requirement for Medical Exam
   C. Requirements for Examination by Licensed Physician
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   B. Medical Surveillance Records
   C. Training Records

ADDITIONAL READING

Contractor Safety Section 5
Facilities Services Section 24
Hazard Communication Section 12
Hazardous Materials Safety Section 29
Personal Protective Equipment Section 14
Respiratory Safety Section 15
I. ASBESTOS MANAGEMENT

The hazardous properties of asbestos have lead to strict regulation of asbestos and asbestos containing materials by the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA). The EPA’s concerns are focused on the disease-causing potential of intermittent, low level exposures that can occur in some school buildings. OSHA’s concerns are focused on permissible workplace exposure levels for those in construction and general industries. EPA regulations governing asbestos are enforced in Louisiana by the Louisiana Department of Environmental Quality (LADEQ).

Of the two forms of asbestos used commercially—friable and non-friable—friable asbestos presents the greater risk as it may be crumbled, pulverized or reduced to a powder under normal hand pressure. When disturbed, as by vibration, air current, or other means, asbestos fibers become airborne and enhance the threat of exposure. Non-friable asbestos, which is bound in a matrix, does not represent a hazard unless it is damaged and rendered friable.

A. Policy

The asbestos policy set forth herein is University-wide and includes all forms of asbestos regardless of any other material used with it as a binder. Certain provisions of the policy may be waived and/or special conditions considered and applied in special cases involving “non-friable” asbestos containing materials (ACM) or ACM that contains less than one percent of asbestos.

The University’s policy is designed to: 1) comply with federal, state, and local governmental requirements, 2) shape governmental requirements into specific plans for “managing” ACM, and 3) give assurance to employees, students, and the surrounding community that the University is making every effort to promote a healthful environment free from asbestos exposure.

Due to the age of many University buildings, asbestos is present in one form or another throughout Tulane facilities but poses no threat as long as it is maintained in good condition and is not disturbed. Each structure on each campus has been, and continues to be, inspected for possible asbestos release. Findings of these inspections are documented in an Asbestos Management Plan for each building stating the location of the ACM, results of sampling, assessment of exposure potential, and an “operation and maintenance” plan for safely conducting routine activities in the ACM area.
Specifically, the asbestos policy dictates that: 1) asbestos shall not be used, in any form, in any University facility construction, renovation, remodeling, and/or installation; 2) no demolition, renovation, repair, or installation of new and/or old items in University buildings shall take place without first notifying the Asbestos Coordinator for each campus; 3) without exception, all plans for construction or renovation must be submitted to Facilities Services; 4) proper controls and precautions must be taken to reduce exposure, which shall be limited to the lowest levels possible or eliminated where feasible; 5) all efforts shall be made to identify, assess and abate asbestos exposure hazards in all University facilities; and 6) removal and disposal of ACM shall be performed in accordance with approved practices and procedures, and within the regulations of appropriate governmental agencies.

B. Responsibilities

1. **Facilities Services** shall be the only department authorized to hire contractors for construction, building, remodeling, maintenance, and service on behalf of the University whenever outside services for such work is required. (See, Section 5, Contractor Safety, of this manual regarding role of Facilities Services in hiring contractors.)

2. **Each campus must designate** an Asbestos Coordinator who shall be a Certified Asbestos Abatement Project Design Professional (CAAPDP) and must have attended and received a passing score from an LADEQ-recognized training course specifically designed for asbestos designers. The Asbestos Coordinator a) shall design the scope of and write specifications for the job in accordance with EPA, OSHA, LADEQ regulations, and University policies; b) shall convene a pre-project meeting to make certain that all personnel participating in the project know their responsibilities; and c) shall receive all job monitoring data for review.

3. **Each campus must also designate a University Project Coordinator** who shall work with OEHS and the Asbestos Coordinator, be responsible for assisting with project supervision and coordination, and ensure that proper procedures are followed when ACM is disturbed. The University Project Coordinator must have attended and received a passing score from an LADEQ recognized training course specifically designed for contractors/supervisors.

4. **The Office of Environmental Health & Safety (OEHS), through its Asbestos Abatement Liaison,** shall a) perform tasks assigned by the Asbestos Coordinator such as conducting pre-project bulk and air sampling, air monitoring during a project, and clearance air monitoring at the conclusion of a project; b) audit the contracted monitoring sites and review, with the Asbestos Coordinator, all results that must be provided to the contracted monitoring firm if, for any reason, an outside monitoring company is used (a final clearance decision shall be made by the Asbestos Coordinator in consultation with OEHS); c) receive all project design information, including scope of the job, as well as monitoring results associated with an asbestos abatement project; and d) maintain the Asbestos Abatement Plans for all Asbestos Hazardous Emergency Response Act (AHERA) covered facilities.

5. **Contractors** for monitoring and for abatement (cannot be one in the same) shall be responsible to the Asbestos Coordinator for the scope of the work. Contractors shall be responsible for all appropriate signage to ensure no one accidentally enters an abatement area. Contractors shall work closely with the Asbestos Abatement Liaison, University Project Coordinator, and Asbestos Coordinator to ensure that abatement activities are carried out in a safe manner. Both the monitoring and abatement contractors must have
attended and received a passing score from an LADEQ recognized course specifically designed for contractors/supervisors. *(see, Section 5, Contractor Safety* of this manual.)

6. **Asbestos Abatement Workers** are individuals trained in the proper handling and removal of ACM and shall be the only personnel allowed to work on an asbestos project. An Asbestos Abatement Worker must have attended and received a passing score from an LADEQ recognized training course specifically designed for asbestos workers.

### II. Asbestos Management Plans

<table>
<thead>
<tr>
<th>A. Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Sampling</td>
</tr>
<tr>
<td>C. Assessment</td>
</tr>
<tr>
<td>D. Operations &amp; Maintenance</td>
</tr>
</tbody>
</table>

**II. ASBESTOS MANAGEMENT PLANS**

University structures, buildings, and work areas have been visually inspected and building records and specifications have been checked to determine the presence of ACM. If accessible, the ACM is inspected every six months with corrective action undertaken if needed. Usually, asbestos in walls and voids can only be identified during preparation for demolition. Inspection results are documented in **Asbestos Management Plans** for each building and can be reviewed by contacting OEHS. Plans are also available by contacting Facilities Services.

Asbestos Management Plans contain extensive information on ACM located in each building and shall be consulted by construction and maintenance personnel prior to performing construction, demolition, or maintenance tasks in identified ACM areas. The management plans in most cases do not contain information on materials assumed to contain asbestos such as floor tiles, roofing materials and materials present in hidden or inaccessible spaces, as these materials were not sampled during the original inspection and were assumed to contain asbestos. Prior to demolition and renovation projects involving such materials, OEHS must be contacted to survey and/or sample suspected materials in these areas. OEHS shall be contacted before initiating work in any known or suspected ACM area.

The following are four major components of an Asbestos Management Plan:

**A. Identification**

Identification of the location and form of ACM discovered in the building.

**B. Sampling**

Results of bulk sampling of suspected material to determine the presence of asbestos and to indicate whether the samples have been analyzed by an NVLAP (National Voluntary Laboratory Accreditation Program) certified testing laboratory.
C. **Assessment**

Assessment of a building’s ACM to establish exposure potential and the necessary remedial or response action required. The assessment may also include air sampling, determinations of air flow patterns, and the condition of the material, as well as the amount of exposed area, accessibility, exposure potential, asbestos content, frequency and duration of exposure, and the number of people exposed.

D. **Operations & Maintenance**

Each Asbestos Management Plan contains an Operations and Maintenance section describing how routine activities may be safely and expeditiously performed by maintenance and other personnel in the ACM area for in-place asbestos.

III. **Notification Requirements for Planned and Emergency Projects**

A. **Planned Asbestos Projects**

Notification requirements for planned asbestos projects shall include the following:

1. **Notification to the University**

Any time there is a possibility that asbestos will be released during a maintenance operation, renovation, demolition, construction, experimental procedures, etc., the Asbestos Coordinator, the University Project Coordinator, or any party becoming aware of a possible release, must notify OEHS. Notification should include a) a description of the ACM that includes size, age, prior use, and any structure to which it may be attached; b) approximate amount of ACM present given in square feet or in linear feet in the case of pipe; c) scheduled starting and completion dates of the project (schedule might include work on any underlying structure as a separate project); d) name of the project’s supervisor; e) names of employees to be assigned to the project; f) exact location (campus, building, floor, room, etc.) of the ACM; and g) a description of the material, if any, that will replace the asbestos.

OEHS’s Asbestos Abatement Liaison or the Asbestos Coordinator, shall convene a meeting to give notification of a planned project to all participating parties, to define responsibilities,
and to make certain that all aspects of the project are fully understood. Participants should include, but not be limited to, the Asbestos Abatement Liaison, the Asbestos Coordinator, the Abatement Contractor, the general contractor, and the University Project Coordinator.

**OEHS must be notified of any asbestos removal by outside contractors at least 15 days prior to a request for bids, or, if bids are not requested, prior to the granting of the contract to allow adequate time for OEHS to assist with project coordination and /or monitoring.** When asbestos removal projects are to be performed by outside contractors, all parts of this policy shall be enforced through specifications prepared by the Asbestos Coordinator prior to bidding or granting of the contract. OEHS must review all bid proposals to ensure that the contractor's proposal covers all applicable health and safety guidelines. (In the case of a contracted “emergency removal,” OEHS must be notified as soon as possible.)

2. **Notification to the State**

The University, through the University Project Coordinator, Asbestos Coordinator, OEHS, or the contractor is required to notify LADEQ if asbestos is to be removed anywhere on University property. **Written notification must be sent 10 days prior to the start date of removal.** All reporting parties must use LADEQ Form AAC-2, Notification of Demolition and Renovation Form.

3. **Notification to City of New Orleans**

The University, through the University Project Coordinator, Asbestos Coordinator, OEHS or contractor shall ensure notification regarding asbestos requirements to the City of New Orleans.

4. **Notification to Contractor**

Contractors shall be made aware of known or suspect asbestos containing materials prior to any work activities.

**B. Emergency Asbestos Project**

Emergency projects may be conducted when necessary due to a *sudden, unexpected* event involving ACM and shall include the following:

1. OEHS must be notified of any emergency asbestos project prior to the beginning of removal, or clean up activities.

2. Projects limited to the removal of no more than three linear feet of pipe insulation or three square feet of other asbestos material using the glovebag technique and handled as outlined in IV.C below, may operate under an “annual emergency notification” obtained from LADEQ. Waste generated must be disposed of during the same calendar year. Permits must be applied for annually by Facilities Services; they are not automatically renewed by LADEQ.

3. When emergency removals are necessary, a telephone call must be made to LADEQ reporting that an emergency notification needs to be obtained for a specific incident.

4. Emergency projects exceeding the size described in **III.B.2** above, may require special emergency notification.
IV. RESPONSE ACTION: MANAGING AN ASBESTOS PROJECT

A. Materials Required

The following should be on hand to ensure safe handling of an ACM project:

1. Personal protective equipment shall include, but not be limited to: a) approved respirators; b) disposable head and shoe covers and gloves; c) full-body coveralls (disposable types are recommended); and d) ANSI approved eye protection.

2. Equipment for the work area: a) 4 mil (minimum) polyethylene sheets to seal off the work area; b) 6 mil (minimum) polyethylene sheets to seal off the floor area; and c) glove bags commercially available for the removal of pipe and joint insulation.

3. Packaging materials: a) shipping containers (usually Department of Transportation drums) approved by OEHS (the type of container needed will depend upon requirements of the disposal site); b) 6 mil thick polyethylene bags or drum liners for lining the drums; c) additional, smaller bags (4 mil thick) for asbestos waste; and d) tape to secure bags of waste.

4. Signs for the work area and labels for containers, drum liners, and bags for holding the asbestos material and waste. Wording on signs and labels is specified by OSHA and therefore OEHS approval is required. All signs will remain intact until the Asbestos Coordinator inspects the job site, declares the job to have been properly and safely completed, and authorizes removal of signs and barriers.

5. Materials for adequately wetting asbestos containing material.

6. A specially equipped asbestos vacuum with high efficiency particulate air (HEPA) filters for clean-up operations.

7. Negative air machine.

8. Decontamination unit with shower.

9. Water filtration unit to filter water used during abatement activities prior to releasing the water down the sanitation sewer.

Asbestos Management / Page 7 / SECTION 21
B. **Initial Steps**

1. Make certain that all equipment and supplies are ready and all personnel are trained as defined in VI.A-F below. Separate lockers must be provided for street clothing and for work clothing. Shower facilities shall be readily available. Employees must shower each time they leave the work area.

2. The work area is to be sealed off in accordance with plans provided in the asbestos specifications.

3. If there are physical barriers that can prevent unauthorized entry (such as doors), they shall be kept closed with a proper sign attached to the outside. If there is no such barrier, a barricade is to be positioned and a sign placed to keep unauthorized personnel from entering the area. If primary exits are blocked, alternate exits must be made accessible and clearly marked to detour pedestrian traffic.

4. Personnel involved in the project shall wear the appropriate protective equipment before entering the work area. When an employee leaves the work area for any reason, all protective equipment is to be removed prior to departure. Disposable equipment must be discarded in the proper waste container and personnel shall appropriately decontaminate themselves and all non-disposable equipment. A clean set of clothing and disposable protective equipment is needed before re-entering the work site.

5. Activities prohibited in the work area include: smoking, chewing of gum or tobacco, eating, drinking, applying cosmetics, or using toilets in the work area.

C. **Removal**

1. All removal shall be done with asbestos material in a wet state. The asbestos material shall be wetted with an appropriate amended water solution available from an asbestos removal supply company. A soapy water solution may be used in lieu of an amending solution. Asbestos materials shall be adequately wetted to prevent fiber dispersal during removal.

2. The material must be removed in small sections. Care must be taken to prevent fiber dispersal during removal.

3. Removed material and related waste materials (such as protective clothing, plastic sheets, etc.) must be properly packaged at the work site for later disposal.

4. For asbestos material placed in drums, the containers shall be lined with 6 mil thick drum liners. Each bag or drum must be labeled with an approved label. A generator label identifying the institution’s name (Tulane), address, specific building name, and a contact’s name and phone number must also be attached. The bags shall be closed goose-neck fashion with tape or ties.

5. Information about drum contents shall be placed on the outside of the drum and on paperwork attached to the drum. Each container, when filled, shall be properly sealed and labeled with OSHA approved labels.
6. Containers must be stored in a suitable location accessible only to authorized personnel until pickup is arranged by OEHS, the Asbestos Coordinator, or the University Project Coordinator.

7. During a glovebag removal, personal air monitoring, and/or area monitoring may be used to represent the fiber levels present in the work area.

8. Any non-disposable equipment must be thoroughly cleaned/decontaminated before removal from the work area. Any materials not used in the immediate work area, such as the signs and barricades, can be returned to storage.

D. Work Site Decontamination

Following removal, the work area must be properly decontaminated before any individuals are allowed to reenter the area. Decontamination procedures include:

1. All surfaces are to be wet cleaned and/or HEPA vacuumed. The work area must then be left undisturbed for 24 hours to allow dust to settle.

2. All surfaces are to be wet cleaned and/or HEPA vacuumed a second time, and again, the work area must be left undisturbed for another 24 hours to allow dust to settle.

3. An inspection shall be performed by OEHS, the University Project Coordinator, and/or the Asbestos Coordinator to ensure that no settled dust/fibers or airborne dust/fibers are present.

4. The work surfaces and the top layer of plastic will be encapsulated using a spray-on encapsulant to lock-down any residual fibers that may remain.

5. Negative air machines should remain operating during the removal process.

6. All polyethylene material, tape, disposable equipment, contaminated cleaning rags, etc., must be properly packed, sealed, labeled, and shipped as asbestos waste.

7. Aggressive air sampling shall be conducted, when required, to determine if the ambient air fiber level is at or below acceptable permissible exposure limits.

8. If settled or airborne dust/fibers are present, cleaning shall continue until fiber levels are within regulatory limits. Upon determination of satisfactory airborne fiber levels, the area may be re-opened.

E. Air Monitoring

1. Air monitoring must be performed for each project in accordance applicable regulations and according to specifics indicated in the project design.

2. In order to document the exposure conditions relative to the asbestos removal, air monitoring may be conducted by OEHS before, during, and after the project. The air monitoring shall establish a baseline, monitor-worker exposure, and ensure safe levels following the project.
3. If, for any reason, an outside monitoring company is used to monitor a job, OEHS shall audit the contract monitoring sites and shall review, with the Asbestos Coordinator, all results that must be provided by the contract monitoring firms. The final clearance decision shall be made by the Asbestos Coordinator in consultation with OEHS.

4. OEHS shall receive all project design information, including scope of the job and monitoring results associated with an asbestos abatement project. OEHS shall maintain the Asbestos Management Plans for all Asbestos Hazardous Emergency Response Act (AHERA) covered facilities.

5. Sampling shall be based on good industrial hygiene practices, and shall include sampling of 20% of the workers. Air samples shall be taken in a worker’s breath zone. Area samples shall also be taken.

6. Sampling and analysis shall be conducted according to practices approved by EPA, OSHA, and LADEQ. Employees shall have a reasonable opportunity to observe monitoring and shall have access to monitoring records.

7. Airborne fiber levels shall be within regulatory limits before unprotected persons are allowed into a project area.

8. Records of the sampling and results are to be kept for the length of employment plus 30 years. Employees shall be notified of sampling results as soon as possible.

F. Waste Disposal

All ACM waste shall be handled through a waste disposal vendor authorized by OEHS and Facilities Services who is fully qualified to handle hazardous materials and who shall make certain that the material is disposed of in an approved landfill in accordance with applicable regulations and University policies and procedures.

FORMS OF ASBESTOS

Of the two forms of asbestos used commercially--friable and non-friable--friable asbestos presents the greater risk as it may be crumbled, pulverized or reduced to a powder under normal hand pressure. When disturbed, as by vibration, air current, or other means, asbestos fibers become airborne and enhance the threat of exposure. Non-friable asbestos, which is bound in a matrix, does not represent a hazard unless it is damaged and rendered friable.
V. Medical Examinations

A. Medical Testing
B. Criteria for Determining Requirement for Medical Exam
C. Requirements for Examination by Licensed Physician
D. Time Frame for Providing Test Results
E. Exemption from Test Requirement
F. Physician’s Determination Re Respirator Usage
G. Availability of Physician Information

V. MEDICAL EXAMINATIONS

A. The University, at each department’s expense, shall provide all required medical testing for University employees working with asbestos. A current medical examination is required of all employees who shall be included on the asbestos worker list.

B. Exposure levels and the need to use respirators shall be the criteria for determining whether a medical examination is required.

C. A comprehensive medical examination performed by a licensed physician is required for employees exposed to asbestos above the action level and for employees required to use an air purifying respirator. This examination must include:

1. a chest x-ray (posterior-anterior 14 x 17 inches) administered at the discretion of the examining physician. The x-ray is to be read by a B Reader, board eligible/certified radiologist or a pneumonoconioses experienced physician. The qualified radiologist shall have immediately available for reference a complete set of the ILO-U/C International Classification of Radiographs for Pneumoconiosis, 1980, and shall classify the films in accordance with the Roentgenographic Interpretation Form: Form CSD/NIOSH (M) 2.8;

2. medical history to elicit symptomatology of respiratory, cardiovascular, and gastrointestinal disease.

3. a mandatory medical questionnaire;

4. pulmonary function tests that include FVC and FEV;

5. cardiovascular and/or digestive system tests if deemed necessary by the physician; and

6. any additional tests deemed necessary by the examining physician with regard to asbestos exposure.

D. Tests outlined in V.C. 4-6 above, must be provided within 30 days of initial employment or as signment to a job that results in asbestos exposure or the use of an air purifying respirator, and annually thereafter.
E. No examination is required if there are adequate records showing that an examination, within the scope required, has been conducted within the past year.

F. A physician shall determine whether an employee is physically capable of working while wearing a respirator. This determination shall be reviewed at least annually.

G. Any physician who conducts an examination in accordance with OSHA provisions shall provide the University any information required by OSHA standards and any other information relative to the employee's asbestos exposure. The physician shall not, however, reveal specific findings of diagnoses unrelated to occupational exposure.

VI. Training

A. LADEQ Approved Training
B. Previously Trained Employees
C. Awareness Training
D. Training in the Use of Personal Protective Equipment and Respiratory Protection
E. Mandatory Attendance

VI. TRAINING

A. All employees who “disturb” and/or involved in asbestos related work activities must first be trained prior to performing any asbestos work activities in accordance with applicable federal, state, and local regulations in the appropriate discipline.

B. Supervisors, abatement workers, contractors, designers, inspectors, and management planners must have attended and received a passing score from an LADEQ recognized training organization providing instruction specifically for the appropriate discipline.

C. Previously trained employees who continue to perform asbestos related activities shall receive refresher training in accordance with applicable regulations.

D. All employees who work in an area where asbestos is located, but who do not disturb or touch the material, are required to attend a minimum two hour asbestos “awareness” training session.

E. Any workers required to wear a respirator or other personal protective equipment must be trained by an individual knowledgeable in PPE and respirators. For asbestos activities, workers shall be fit tested every six months.
VII. Recordkeeping

A. Exposure Measurement Records

B. Medical Surveillance Records

C. Training Records

VII. RECORDKEEPING

A. All records relating to exposure measurements taken to monitor employee exposure to asbestos must be maintained for the length of employment plus 30 years. Exposure measurements must include the following: 1) date of monitoring; 2) operation or project performed; 3) sampling and analytical methods; 4) personal protective equipment in use; and 5) name and social security number of employee monitored or represented.

B. Medical surveillance records must be maintained for the employee's duration of employment plus 30 years. The records shall be retained by Medical Records and Radiology and made available to authorized representatives of NIOSH and OSHA as well as to the employee's physician upon request of the employee. Records must include the following information: 1) name and social security number of employee represented; 2) a copy of medical test results and physician's interpretations; 3) any employee medical complaints; and 4) a copy of any information provided to physician for interpretation.

C. All records relating to training of employees must be submitted to and retained by OEHS for a minimum of one year past the date of employment. Training records shall be maintained by OEHS.
DATE: 

TO: 

FROM: James J. Balsamo, Jr., Director
Office of Environmental Health & Safety (OEHS) - TW16
(504) 584-2872 phone /(504) 584-1693 fax

RE: Ergonomic Evaluation Report

On ________________, this office received an WMSD Hazard Report, or a First Report of Injury/Illness form regarding a present or potential WMSD hazard in your area. Upon receipt, the report was logged and assigned OEHS Control No. __________. Please use this number in any further correspondence or phone inquiries regarding this matter.

In response to the hazard report, an evaluation of the work area and/or task(s) to determine if a hazard(s) was present that might result in a WMSD, was conducted on ________________ by ________________________, an OEHS staff member. Employees whose work areas (or tasks) were the focal point of the survey are: ________________.

The result of our evaluation indicated that a potential WMSD hazard(s):

✧ did not exist in your area at the time of the evaluation and no further action is required on your part.

✧ did exist in your area at the time of the evaluation and therefore the measures outlined in the attached Ergonomic Evaluation Report are recommended. The report provides a "Survey Findings" column listing the problems discovered during the survey. The "Corrective Actions" column of the report should be completed by the supervisor of the area and should describe measures that are taken to correct the problems indicated.

Corrective measures should be taken and the attached Ergonomic Evaluation Report completed and returned to OEHS by the date indicated at the top of page one of the report.

Please contact ________________, at OEHS if you have any questions or need assistance in finding ergonomic solutions to the problems indicated in the Evaluation Report. The office phone number is (504) 588-5486. We sincerely appreciated your cooperation in conducting the survey and we hope that if you need help with finding solutions, you will let us know.
LABORATORY/STUDIO CLOSE-OUT NOTIFICATION

This close-out notification should be completed by the **Principal Investigator** (for studios, the **Faculty Member** in charge of the studio) at least 90 days prior to the target date for vacating a lab (or studio). It should be forwarded to the **Office of Environmental Health & Safety**, c/o the **Chemical Safety Manager**. A copy of the form should be submitted to the Department Chair.

<table>
<thead>
<tr>
<th>Department responsible for lab (studio) being vacated:</th>
</tr>
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<tbody>
<tr>
<td>LOCATION OF CLOSE-OUT LAB (STUDIO):</td>
</tr>
<tr>
<td>CAMPUS:</td>
</tr>
<tr>
<td>BUILDING:</td>
</tr>
<tr>
<td>ROOM NO:</td>
</tr>
<tr>
<td>Location of new or temporary lab (studio):</td>
</tr>
<tr>
<td>Campus:</td>
</tr>
<tr>
<td>Building:</td>
</tr>
<tr>
<td>Room No:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Principal Investigator (Lab):</th>
<th>Phone:</th>
<th>E-mail:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Member (Studio):</td>
<td>Phone:</td>
<td>E-mail:</td>
</tr>
<tr>
<td>Laboratory/Studio or Department Contact:</td>
<td>Phone:</td>
<td>E-mail:</td>
</tr>
<tr>
<td>Departmental Safety Representative:</td>
<td>Phone:</td>
<td>E-mail:</td>
</tr>
</tbody>
</table>

Reason for Close-Out:

TARGET MOVE DATE: ___/___/___

<table>
<thead>
<tr>
<th>Hazardous Materials</th>
<th>Hazardous Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were any of the following hazardous materials used in the lab (or studio)?</td>
<td>What waste collection issues are anticipated?</td>
</tr>
<tr>
<td>Radioactive Materials  ♦</td>
<td>Mixed Bio/Radioactive</td>
</tr>
<tr>
<td>Hazardous Chemicals  ♦</td>
<td>Mixed Bio/Hazardous Chemicals</td>
</tr>
<tr>
<td>Biohazardous Materials  ♦</td>
<td>Mixed Radioactive/Haz Chemicals</td>
</tr>
<tr>
<td>Sharps  ♦</td>
<td>Highly Reactive Chemicals</td>
</tr>
<tr>
<td>Any unknown/unlabeled materials in the lab/studio? Y___N___</td>
<td>Shock Sensitive Materials</td>
</tr>
<tr>
<td>Any gas cylinders for disposal? If so, how many?</td>
<td>Highly Toxic Materials</td>
</tr>
<tr>
<td>Will any hazardous materials in the current lab/studio be transferred to the new location? Y___N___</td>
<td>Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biological Safety Cabinets:</th>
<th>Any BSCs that will have to be moved? If so, how many? _____</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any BSCs that will remain in the lab? If so, how many? _____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fume Hoods:</th>
<th>Any fume hoods that will have to be moved? If so, how many? _____</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any fume hoods that will remain in the lab/studio? If so, how many? _____</td>
</tr>
</tbody>
</table>

Other issues/concerns/anticipated problems. Use reverse side of form if needed.

Signatures:

**Principal Investigator** (Laboratory)  
**Faculty Member** in Charge (Studio)

Date:

**Departmental Safety Representative**

Date:

Custodial Safety / Page 17 / SECTION
I. CUSTODIAL SAFETY

A. General Guidelines

1. Personal Protection

   a. Wash your hands often.

   b. Dry hands before handling electrical equipment.

   c. Never use your hands to reach into or pack down trash.
d. When necessary, wear protective equipment such as gloves when using cleaning agents. Wear comfortable shoes with supportive soles. Review Section 14, Personal Protective Equipment, of this manual to ascertain what, if any, protective equipment the job might require and then consult with your supervisor: supervisors are ultimately responsible for choosing the appropriate personal protective equipment (when needed), and for training employees in the usage, care, and maintenance of such equipment.

2. **Cleaning**
   a. Use fresh cleaning supplies.
   b. Do not let trash pile up. Empty and clean trash containers regularly.
   c. Keep storage places neat and clean.
   d. Keep equipment clean. Keep machine guards in place.
   e. Use the appropriate signage when mopping or polishing floors.

3. **Avoiding Trip Hazards**
   a. Keep cords and vacuum hoses out of the way to avoid tripping hazards.
   b. Report floor "tripping hazards" (ripped carpets, loose, missing or broken tiles).
   c. Move equipment slowly. Park equipment and carts away from doorways and corners.
   d. Do not block aisles, stairs, or exits with equipment and supplies.

4. **Electrical Equipment**
   a. If problems occur with electrical equipment, remove the equipment from use and inform your supervisor.

   b. **To unplug electrical equipment, grip and pull the plug; do not yank the cord!**

5. **Restricted Areas**
   a. Do not enter restricted areas unless authorized to do so. Permission to enter laboratory areas must be obtained from the supervisor/principal investigator in charge of the lab. His/her name and contact information are available on door signage posted outside the restricted area.

   b. Obey all hazard warning signs. If you have any questions, ask your supervisor.

6. **Site-Specific Procedures**
   a. Review with your supervisor any cleaning procedures that may be unique to a specific work area.
b. Make certain that you have the proper equipment for cleaning such areas, and that you are wearing the correct personal protective equipment, if needed.

7. Monitoring

If there is a demonstrated need or regulatory requirement for work area environmental monitoring or medical surveillance, the Office of Environmental Health & Safety (OEHS) shall ensure that an audit is performed to make certain that regulatory provisions have been carried out.

B. Cleaning Floors

1. Recommendations of the flooring manufacturer must be followed in keeping floors clean, sanitary, and safe. For example, oily products when applied to wood floors increase the chance of slip-and-fall hazards.

2. When mopping, place warning signs conspicuously to alert pedestrian traffic of wet or slippery floor surfaces. Mop elevator lobbies during off-peak traffic hours, and remain in area to warn persons of wet floor conditions as they exit the elevator.

3. When mopping, handle one section of floor at a time. If traffic is heavy, rope off the section being mopped.

4. LPG (liquid propane gas) fired cleaning/buffing machines are not to be used in Tulane buildings.

5. Materials spilled on floors shall be cleaned up promptly.

6. Use cleaning materials in appropriate dilutions and make certain you are in a well ventilated area when diluting full strength chemical cleaners. Wear appropriate protective equipment.

7. Properly label all diluted chemical containers (see, Section 12, Hazard Communication, of this manual).

C. Hazardous Materials

1. Make certain that you read the manufacturer’s label for all cleaning solutions being used. For more information, MSDSs (material safety data sheets) should be available from your supervisor or OEHS.

2. Consult with your supervisor before doing work in areas where hazardous materials are used. Custodial work in such areas may require special handling. For instance, in areas where an accumulation of hazardous dust is possible, such as in the ceramics clay mixing room, wet cleaning methods or vacuum cleaning using specialized HEPA equipment is required for cleaning furniture and lighting fixtures. Custodial work in hazardous areas may also require special training and access to information on hazardous materials.

3. Consult with your supervisor for information and training regarding any personal protective equipment, including respiratory protection, needed to perform custodial work in hazardous areas.
4. Make certain you observe all caution signs posted in hazardous areas.

5. **Hazardous Waste Disposal**

Wastes determined to be hazardous should *never* be discarded into the sewer system or into regular solid waste receptacles. Such waste must be properly managed according to hazardous wastes policies and procedures (see *Section 29, Hazardous Materials Safety* of this manual).

6. Review the outline on page one of each of the following sections of this manual to determine if there are other areas of safety that may be relevant to your job: *Section 12, Hazard Communication; Section 29, Hazardous Materials Safety; Section 14, Personal Protective Equipment; and Section 15, Respiratory Safety.*

D. **Ladders**

If a cleaning assignment should entail the use of a ladder, review *Ladders and Scaffolds* in *Section 24, Facilities Services,* of this manual for direction on the safe use of ladders. Never stand on a table or chair to accomplish a cleaning task.

E. **Fire Protection**

Review fire safety guidelines in *Section 26, Fire Safety;* and *Section 1, Emergency Response* (Section 1 also includes instructions on use of fire extinguishers), of this manual.

II. **COMPLIANCE**

*Departmental Safety Representatives* (DSR) help to ensure that the units they represent that perform custodial work are in compliance with all relevant policies and procedures outlined in this manual. (A *unit* is a department, section, center, or program, or any number or configuration of these components.) DSRs also collect and submit to OEHS any required documentation such as inspection reports, training acknowledgments, etc., prepared by unit supervisors.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the *Unit Head.*

If the problem remains unresolved, OEHS shall consult with the Unit Head, and, if necessary, take the issue of the non-compliant unit to the University's *Health & Safety Operations Committee* for resolution.
- See, Section 2, Environmental Health & Safety, of this manual for information on the University’s Compliance Management System.)

End of Text – Return to Section 23, Page 1 Outline
LABORATORY/STUDIO CLOSE-OUT CERTIFICATION

This close-out certification must be completed by the **Principal Investigator** (for studios, the **Faculty Member** in charge of the studio) at the completion of close-out procedures when the lab/studio is ready for final inspection. It should be forwarded to the **Office of Environmental Health & Safety**, c/o the **Chemical Safety Manager**, with copies provided to the Department Head. OEHS will contact the Principal Investigator and arrange to have the final inspection conducted on the date/time indicated below.

<table>
<thead>
<tr>
<th>Department responsible for lab(studio) being vacated:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department Head:</strong></td>
</tr>
<tr>
<td><strong>Location of Close-out Lab (Studio):</strong></td>
</tr>
<tr>
<td>Campus:</td>
</tr>
<tr>
<td>Building:</td>
</tr>
<tr>
<td>Room no:</td>
</tr>
<tr>
<td><strong>Date/time lab (studio) will be ready for final close-out inspection by OEHS:</strong></td>
</tr>
<tr>
<td>Date: <strong><strong>/</strong></strong>/____</td>
</tr>
<tr>
<td>Time:</td>
</tr>
<tr>
<td><strong>Principal Investigator:</strong></td>
</tr>
<tr>
<td>Phone:_________E-mail: ________________</td>
</tr>
<tr>
<td><strong>Faculty Member in Charge (Studio)</strong></td>
</tr>
<tr>
<td>Phone:_________E-mail: ________________</td>
</tr>
<tr>
<td><strong>Departmental Safety Representative:</strong></td>
</tr>
<tr>
<td>Phone:_________E-mail: ________________</td>
</tr>
</tbody>
</table>

**In preparations to close-out and vacate the above indicated lab (studio), I hereby certify that:**

1. All biological materials have been removed from the lab.
2. Any biological safety cabinets/fume hoods have been evaluated by OEHS and suggested decontamination protocols have been followed whether or not the cabinets were moved.
3. All radioactive materials have been removed, transferred to another principal investigator or turned over to the OEHS Radiation Safety Officer for disposal.
4. All chemicals that have been identified for disposal have been tagged and turned over to the OEHS Hazardous Waste Specialist. All other chemicals have been removed from the lab (studio).
5. All remaining surfaces in the lab (studio) (e.g., walls, floors, workbenches, inside drawers and cabinets) have been disinfected, cleaned or decontaminated to ensure that no biological, chemical, or radioactive contamination remains.
6. All equipment with internal radioactive sources have been transferred to other radiation laboratories or the sources have been removed so that the equipment may be discarded.
7. All sharps have been removed from the lab (studio).
8. No lead shielding remains.
9. No compressed gas cylinders or liquified gases remain in the lab (studio).

**Principal Investigator (Laboratory)**  
**Faculty Member in Charge (Studio)**  
**Date**

---

**FINAL INSPECTION CERTIFICATION**

I hereby certify that the above lab (studio) has been inspected and is ready for renovation/occupancy.

**OEHS Representative**  
**Date**

---

23F-OEHS/Tulane (Rev.8/03) Laboratory Safety
Tulane University
Student Report of On-Campus Environmental Injury or Disease

This report should be completed if a student injury or illness is related to on-campus activities or an unsafe condition in a University building that may require follow-up by the Office of Environmental Health & Safety (OEHS).

Reportable incidents might include the following: Cuts or burns related to glass working class; slips and falls related to poor lighting or uneven walking surfaces; electrical shock from damaged wiring; food poisoning; contact with hazardous chemicals; etc.

Students who report directly to the Student Health Center should complete this report form.

If the injury occurs during classroom activities, the course instructor should be notified immediately. The instructor should complete this form and forward a copy to OEHS regardless of whether or not the student reports to the Student Health Center.

This is confidential material and will be treated as such.

Office of Environmental Health & Safety (OEHS)
Campus Mail: TW-16
Main Office: (504) 988-5486
Uptown Campus: (504) 865-5307
Fax: (504) 988-1693
### Instructions:
- **A. ✓** Student to complete both pages of form. Turn in to Student Health Center.
- **B. ✓** Student Health Center must send immediately by Campus Mail to:
  
  **Office of Environmental Health & Safety - TW16**

<table>
<thead>
<tr>
<th>1. Date of Report:</th>
<th>2. Date of Injury:</th>
<th>3. Time of Injury (a.m. / p.m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. If Fatal injury, give date of death:</th>
<th>5. Date Student Health knew of Injury:</th>
<th>6. Date Disability Began:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
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<table>
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<tbody>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. Local Address-Include Parish and Zip Code:</th>
<th>11. Phone number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Exact Location of Incident: (Building, floor, room number, etc. If off premises: street, address, city &amp; state)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

16. What was the Student doing when injured: (Be specific. If using tools or equipment or handling material, name them and tell what he/she was doing with them.) And 17. How did incident occur? (Describe fully the events which resulted in injury or disease. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to injury or disease.)

<table>
<thead>
<tr>
<th>18. Nature and Location of injury or Disease (Describe fully, include parts of body affected):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**DID INJURY OR DISEASE OCCUR BECAUSE OF:**

<table>
<thead>
<tr>
<th>19. Unsafe condition: Yes No (Describe above)</th>
<th>20. Unsafe Act: Yes No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. Location of Care Required: **Student Health Center:** Uptown Campus / Downtown Campus Other - specify:

22. PERSON COMPLETING THIS REPORT IF NOT STUDENT (PRINT NAME/SIGNATURE):

**SIGNATURE:**
### EVENT CODE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Miscellaneous</th>
<th>Faculty/System</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Off chair, furniture</td>
<td>Animal, insects, plants</td>
<td>737 Hearing</td>
</tr>
<tr>
<td>102</td>
<td>Off dock, opening, excavation</td>
<td>Public transportation</td>
<td>738 Vision</td>
</tr>
<tr>
<td>103</td>
<td>Off ladder, scaffold</td>
<td>Sports activity</td>
<td>739 Smell</td>
</tr>
<tr>
<td>104</td>
<td>Off machinery, equipment</td>
<td>Vehicle passenger, driver</td>
<td>740 Taste</td>
</tr>
<tr>
<td>105</td>
<td>Off vehicle</td>
<td>Other</td>
<td>741 Touch</td>
</tr>
<tr>
<td>106</td>
<td>Off high place</td>
<td></td>
<td>742 Respiratory</td>
</tr>
<tr>
<td>107</td>
<td>On stairs, steps-indoors</td>
<td></td>
<td>743 Circulatory</td>
</tr>
<tr>
<td>108</td>
<td>On other flat surfaces-indoors</td>
<td>NATURE OF INJURY CODE</td>
<td>744 Digestive</td>
</tr>
<tr>
<td>109</td>
<td>On stairs, steps-outdoors</td>
<td>Injury</td>
<td>745 Nervous</td>
</tr>
<tr>
<td>110</td>
<td>On paved surfaces-outdoors</td>
<td></td>
<td>746 Other</td>
</tr>
<tr>
<td>111</td>
<td>On loose ground cover-outdoors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>On Flat surface-outdoors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>Struck, Caugh (by, against between)</td>
<td>By airborne dust particles</td>
<td>801 Sound level</td>
</tr>
<tr>
<td>202</td>
<td>By another person, object being held</td>
<td>By another person, object being held</td>
<td>802 Weather condition</td>
</tr>
<tr>
<td>203</td>
<td>By chips/particles from use of powered</td>
<td>By chips/particles from use of powered</td>
<td>803 Illumination</td>
</tr>
<tr>
<td>204</td>
<td>By hand tools, machinery or equipment</td>
<td>By hand tools, machinery or equipment</td>
<td>804 Working surface/facility layout condition</td>
</tr>
<tr>
<td>205</td>
<td>By object - blown off pressurized</td>
<td>By object - blown off pressurized</td>
<td>805 Flammable liquid/solid exposure</td>
</tr>
<tr>
<td>206</td>
<td>By object - broken off, vribated loose, mobilized</td>
<td>By object - broken off, vribated loose, mobilized</td>
<td>806 Chemical action/reaction exposure</td>
</tr>
<tr>
<td>207</td>
<td>By object - collapse, cave-in</td>
<td>By object - collapse, cave-in</td>
<td>807 Materials handling equipment/ method</td>
</tr>
<tr>
<td>208</td>
<td>By object - dropped, released by self during handling</td>
<td>By object - dropped, released by self during handling</td>
<td>808 Gas/vapor/mist/fume/smoke/dust condition</td>
</tr>
<tr>
<td>209</td>
<td>By object - from explosion, over-</td>
<td>By object - from explosion, over- pressure</td>
<td>809 Overhead moving/falling object action</td>
</tr>
<tr>
<td>210</td>
<td>By object - dropped, released or thrown</td>
<td>By object - dropped, released or thrown</td>
<td>810 Flying object action</td>
</tr>
<tr>
<td>211</td>
<td>- by another person</td>
<td>By object - dropped, released or thrown</td>
<td>811 Temperature above or below tolerance level</td>
</tr>
<tr>
<td>212</td>
<td>By - other</td>
<td>By - other</td>
<td>812 Radiation condition</td>
</tr>
<tr>
<td>213</td>
<td>By/against handtool, non-powered</td>
<td>By/against handtool, non-powered</td>
<td>813 Pinch point action</td>
</tr>
<tr>
<td>214</td>
<td>By/against handtool, powered</td>
<td>By/against handtool, powered</td>
<td>814 Catch point/puncture action</td>
</tr>
<tr>
<td>215</td>
<td>By/against moving equipment/</td>
<td>By/against moving equipment/ powered</td>
<td>815 Shear point action</td>
</tr>
<tr>
<td>216</td>
<td>machinery</td>
<td>By/against moving equipment/ powered</td>
<td>816 Squeeze point action</td>
</tr>
<tr>
<td>217</td>
<td>Against stationary, sharp object</td>
<td>Against stationary, sharp object</td>
<td>817 Overpressure/underpressure condition</td>
</tr>
<tr>
<td>218</td>
<td>Against - other</td>
<td>Against - other</td>
<td>818 Poor housekeeping</td>
</tr>
<tr>
<td>219</td>
<td>Caught in moving machinery,</td>
<td>Caught in moving machinery, equipment</td>
<td>819 Other</td>
</tr>
<tr>
<td>220</td>
<td>Caught, pinched between objects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>221</td>
<td>Needle - self inflicted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>Needle - waste handling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>223</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>Chemicals - corrosive, irritating</td>
<td>Head/neck</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td>substances in, around or from process equipment</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>303</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>304</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>305</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
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<tr>
<td>306</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
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<td>307</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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<td>308</td>
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<tr>
<td>309</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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<tr>
<td>310</td>
<td>Chemicals - corrosive, irritating</td>
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<tr>
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<td>Chemicals - corrosive, irritating</td>
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<td>312</td>
<td>Chemicals - corrosive, irritating</td>
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<td>313</td>
<td>Chemicals - corrosive, irritating</td>
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<tr>
<td>314</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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<tr>
<td>315</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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<td>316</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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<tr>
<td>317</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
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</tr>
<tr>
<td>318</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>319</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>Chemicals - corrosive, irritating</td>
<td>Substances in, around or from process equipment</td>
<td></td>
</tr>
<tr>
<td>401</td>
<td>Overexertion, Strain /Load, No Load</td>
<td>Overexertion, Strain /Load, No Load</td>
<td></td>
</tr>
<tr>
<td>402</td>
<td>Load-carrying, holding, twisting, reaching</td>
<td>Load-carrying, holding, twisting, reaching</td>
<td></td>
</tr>
<tr>
<td>403</td>
<td>Load-lifting</td>
<td>Load-lifting</td>
<td></td>
</tr>
<tr>
<td>404</td>
<td>Load-pulling, pushing, turning</td>
<td>Load-pulling, pushing, turning</td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>Load-moving, moving</td>
<td>Load-moving, moving</td>
<td></td>
</tr>
<tr>
<td>406</td>
<td>Load - reaching, twisting</td>
<td>Load - reaching, twisting</td>
<td></td>
</tr>
<tr>
<td>407</td>
<td>Load - other</td>
<td>Load - other</td>
<td></td>
</tr>
<tr>
<td>408</td>
<td>Load - patient</td>
<td>Load - patient</td>
<td></td>
</tr>
</tbody>
</table>

### NATURE OF INJURY CODE

**Injury**

- Amputation
- Bite, sting
- Bruise, contusion
- Burn - hot, cold, chemical, scald
- Concussion, unconscious
- Cut, laceration
- Exhaustion, heat stroke
- Electric shock
- Fracture, crush, dislocated
- Internal injury, hernia, heart
- Loss of senses, faculties
- Puncture
- Scrape, scratch, abrasion
- Sprain, strain, torn
- Suffocation, drowning
- Dermatitis (skin rash)

**Illness**

- Skin disease, disorder
- Lung problem, dust related
- Lung problem, toxic agent related
- Poisoning
- Disorders due to physical agent (other than toxic agents)
- Disorders associated with repeated trauma

**PART OF BODY CODE**

#### HEAD/NECK

- Scalp
- Skull
- Ears (R/L Both)
- Eyes (R/L Both)
- Face (R/L Both)
- Nose
- Mouth/Teeth
- Neck
- Whole Head

#### Shoulder

- Shoulder (R/L Both)
- Upper Arm (R/L Both)
- Elbow (R/L Both)
- Forearm (R/L Both)
- Wrist (R/L Both)
- Hand (R/L Both)
- Fingers (R/L Both)
- Whole Arm (R/L Both)

#### Torso

- Chest/Ribs
- Back - Muscles
- Back - Skeletal/Nervous System
- Abdomen
- Groin
- Hip (R/L Both)
- Buttocks
- Whole Torso

#### Leg

- Thigh (R/L Both)
- Knee (R/L Both)
- Shin, Calf (R/L Both)
- Ankle (R/L Both)
- Foot (R/L Both)
- Toes
- Whole Leg (R/L Both)

### CONTRIBUTING ENVIRONMENTAL FACTOR CODE

- Sound level
- Weather condition
- Illumination
- Working surface/facility layout condition
- Flammable liquid/solid exposure
- Chemical action/reaction exposure
- Materials handling equipment/method
- Gas/vapor/mist/fume/smoke/dust condition
- Overhead moving/falling object action
- Flying object action
- Temperature above or below tolerance level
- Radiation condition
- Pinch point action
- Catch point/puncture action
- Shear point action
- Squeeze point action
- Overpressure/underpressure condition
- Poor housekeeping

### CONTRIBUTING HUMAN FACTOR CODE

- Misjudgement of hazardous situation
- No personal protective equipment used
- No special protective clothing/ appropriate attire
- Malfunction of procedure for securing operation or warning of hazardous situation
- Distracting actions
- Equipment in use not appropriate for operation or process
- Malfunction of neuro-muscular system
- Malfunction of perception system with respect to task environment
- Safety devices removed or inoperative
- Operational position not appropriate for task
- Procedure for handling materials not appropriate for task
- Defective equipment in use
- Malfunction of procedure for lock-out or tag-out
- Procedure to complete task not appropriate
- Other

Comments or recommendations to help prevent future occurrences of similar problems:

________________________

________________________

Attach extra sheet of paper if needed.

Print Student's Name: __________________________

Date of Injury: ___________________________
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   E. Electrical Instruments, Devices, Equipment
   F. Fire Prevention
   G. Hand and Power Tools
   H. Piping Systems
   I. Equipment and Machinery

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    D. Mowers and Tractors
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     B. Training
     C. Permit System
     D. Preventing Unauthorized Entry
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    B. Scaffolds

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    B. Excavations
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    D. Hot Work (Welding, Cutting, Soldering, Burning)

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    B. Powered Industrial Trucks
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     B. Automobiles, Trucks and Motorized Vehicles
     C. Vehicle Repair and Maintenance Shops

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      A. Lockout
      B. Tagout

ADDITIONAL READING (See next page)
I. GENERAL PHYSICAL PLANT/Maintenance Safety

A. Basic Guidelines

Employees should:

1. become familiar with and observe safety precautions to avoid workplace hazards.

2. help identify and eliminate hazards by reporting unsafe actions, conditions, equipment, or procedures to their supervisors for corrective action or to the Office of Environmental Health and Safety (OEHS) for evaluation.

3. respond promptly to requests for repair of unsafe equipment or hazardous working conditions.

4. determine whether or not the work being performed creates a hazard to other parties. If so, place barriers or warning signs in clear, visible locations.
5. ensure that spills, debris, construction products, etc., are cleaned up immediately. If immediate remedy is not possible, block off the area and place warning signs.

6. dress appropriately for the work being done, observe dress precautions in designated areas, and wear footwear that provides good stability and traction.

7. help reduce fire and slip/trip hazards by maintaining the general order and neatness of his/her work environment.

B. Personal Protective Equipment

Certain duties may require the wearing of equipment specifically designed for work where exposure to hazards cannot be otherwise controlled. If personal protective equipment is required, supervisors shall issue the equipment and instruct employees in its use. Once instructed, proper use and maintenance of the equipment becomes the employee’s responsibility. (See Section 14, Personal Protective Equipment, and Section 15, Respiratory Safety, of this manual.)

C. Reporting Job Related Injuries/Illnesses

All job related injuries or illnesses, no matter how minor, must be reported on a First Report of Occupational Injury/Illness form (Form 18F-OEHS in Appendix E of this manual), signed by the area supervisor, and forwarded to Risk Management and OEHS within 24 hours of the occurrence. (See Section 4, Injury/Illness Reporting, of this manual for details.)

D. Contracted Alterations, Repairs, Maintenance

Alterations, additions, repairs or maintenance of facilities, buildings, or equipment must be performed by personnel contracted by Facilities Services. (See Section 5, Contractor Safety, of this manual.)

E. Electrical Instruments, Devices, Equipment

1. General Guidelines

   a. Lock and tag electrical switches when doing repair work. (See VIII, “Equipment Lockout/Tagout” below). When working on electrical distribution panels, sub-panels, motor controls, fixed equipment, etc., make certain that power sources are disconnected and tagged out of service, and then test to ensure that the power is off before beginning work. Use rubber gloves, insulated tools, rubber mats and aprons as needed or required for the work at hand. When work is complete, test the system before putting it in service, restore controls to normal operating position, remove tags, and replace panel covers.

   b. Do not overload electrical circuits under any circumstances. Never exceed specifications for use of fuses or circuit breakers.

   c. Multiple outlet strips that are properly protected with a circuit breaker or fuse may be used for computer configurations.

   d. Portable electric heaters are not allowed unless the HVAC system for an area is not adequate and supplemental heating is needed. In such cases, Facilities Services shall make adjustments to the HVAC system.
e. Do not use electrical cheaters or adapters.

f. Do not unplug equipment by pulling on the power cord. Unplug by grasping the plug directly.

g. Report any device and remove it from service if: 1) it has been dropped or physically abused, or if liquid has been spilled into or onto it; 2) anyone has received a shock in connection with its use; 3) there is evidence, by smell or touch, of overheating; 4) the equipment makes unusual noises.

2. **ExtensionCords**

Use of extension cords or 3-way plugs in lieu of permanent wiring is a violation of building fire codes. Grounded, heavy gauge extension cords may be used only as a “temporary” supply of electrical power for portable equipment (e.g., maintenance power tools, audio-visual equipment, housekeeping appliances, etc.) Extension cords shall not be used in conjunction with portable heaters, irons, toasters, or similar heat producing devices. They shall not be used in locations where flammable vapors/gases are present, or in other potentially hazardous areas.

When used as a temporary supply of electrical power, extensions cords shall:

a. be used as specified by the manufacturer;

b. be used only to service a single portable lamp or portable apparatus of not more than 15 amperes (preferably less);

c. not be hung over electrical conductors such as pipes or placed under tension or coiling;

d. be of continuous lengths with no splices or tapes, of heavy duty cable, of three current carrying conductors one of which is a ground wire, with grounded-type receptacle and plug cap (metal clad plug caps shall not be used); and

e. where shop lights are used, they shall be guarded with an electrically non-conducting guard to protect the bulb against breakage and to avoid a potential shock hazard to personnel.

3. **PerformanceChecks**

Users of electrical devices or instruments are responsible for conducting “performance checks,” and for notifying the appropriate service unit or company if operational problems are found. A performance check is conducted to review the functioning of devices or equipment so that obvious malfunctions and defects may be corrected before a hazardous situation occurs. Performance checks are not intended or expected to replace a full electrical/electronic inspection.

a. If operational problems are detected during a performance check, the appropriate service unit or company shall be notified.

b. No ancillary equipment other than that used during normal operation shall require a performance check. No person or animal shall be attached to the equipment during a performance check.
c. Performance checks should include manipulation of controls, operating parameters, and calibration (if necessary) to ascertain whether or not the device is operating properly.

d. Performance checks shall be done on a regular basis, either periodically (e.g., daily, weekly, monthly, etc.) or, preferably, before each use.

e. The performance check shall include examination for any of the following conditions:
   1) wires (especially power cords) that are frayed, worn, burned, or missing insulation;
   2) broken, bent, or loose plugs;
   3) loose cable connectors or those that do not hold securely;
   4) loose switches or those that do not snap definitely from one position to another;
   5) control knobs that are loose or do not turn smoothly;
   6) switches, knobs, or other controls that do not consistently produce the expected result when operated;
   7) burned out pilot or indicator lights;
   8) events suggesting that the device is not operating normally.

F. Fire Prevention

1. Do not allow oily rags to accumulate; doing so may produce spontaneous combustion. Keep rags in UL or FM listed containers with self-closing covers.

2. Where batteries are being charged, a) they must be kept away from open flames or other possible ignition sources; b) adequate ventilation must be provided; and c) smoking must be prohibited in the area. Hydrogen given off during a charging operation is highly flammable and may flash or explode. Safety showers and eyewash stations must be installed in the charging areas.

3. Periodic checks of all fire doors shall be made to ensure that door closures function properly, that doors latch securely, and that fire doors are not blocked.

4. Follow the “No Smoking” rules in maintenance shops areas where flammable vapors/gases are present. (See Section 26. Fire Safety, of this manual for University policy on smoking, which is prohibited in all but designated areas.)

5. If not in their original containers, all flammable coatings must be stored in UL or FM approved safety cans or flammable liquid storage cabinets according to state/local fire codes. (See, Section 26. Fire Safety, and Section 29. Hazardous Materials Safety, of this manual.)

G. Hand and Power Tools

1. Keep all hand tools in good condition. Cutting tools must be kept sharp.

2. Use only non-sparking tools when working around flammable or explosive vapors or gases.

3. Extension cords for temporary use with power tools shall be carefully checked before using to ensure that they are free of defects.

4. A handy box, or holders, is the safest way to carry tools.

5. Power driven tools shall be handled, operated, serviced, and repaired only by personnel trained and certified by qualified persons. Certification shall be documented. (See Form 04F-OEHS, “Employee Safety Training Acknowledgment,” in Appendix E of this manual.)
6. If you are required to enter special areas of the University, such as dietary areas, radiation hazard areas, or biohazard areas, any tools you use in such areas shall be cleaned and decontaminated as required for the particular area to prevent cross contamination.

H. Piping Systems

1. When working on piping systems containing non-hazardous materials, close, and tag-out appropriate cutoff valves. Where work involves steam or other hazardous materials, implement lock-out, tag-out procedures. (See VIII. Equipment Lockout/Tagout, below)

2. Valves and switches must be shut off when work is done on steam and hot water pipelines or electrical switches and systems. Warning tags must be placed on valves as well as on switches to keep other employees from operating them. (See VIII. Equipment Lockout/Tagout, below)

3. Before any hot work is done either by in-house personnel or outside contractors, a Hot Work Permit (Form 10F-OEHS, Appendix E of this manual) must be obtained from OEHS or Facilities Services.

4. Hot water thermostats, except in dietary areas, shall be regulated so that the temperature is between 110°F-125°F at the faucet.

I. Equipment and Machinery

1. Inspect equipment regularly. Make certain that it is properly guarded and use the equipment/machinery correctly.

2. A preventive maintenance system helps in preventing accidents and shall be implemented for all equipment.

3. Equipment that is potentially contaminated (infectious, toxic, or radioactive) must be certified as safe by the area’s supervisor before it is repaired or cleaned. The certification shall be in writing on a tag attached to the equipment. This precaution extends to fixed building equipment such as chemical/biological hoods and associated plenums and central vacuum systems.

4. Machinery and equipment is fitted with protective devices such as guards and in terlocks designed to protect operators from exposure to moving parts during normal operation. If a job involves the use or servicing of machinery and equipment, be sure these protective devices are in place and operable. Always follow lockout/tagout procedures and replace all guards removed during repair or maintenance activities.

5. Long hair and loose clothing must be secured when working with rotating or reciprocating machinery/equipment.
II. GROUNDS MAINTENANCE SAFETY

A. General Guidelines

1. Prevention of accidents and injuries from tools and machines used in grounds maintenance requires selection of the appropriate equipment for specific purposes, and the proper use and maintenance of the equipment selected. Fuels and chemicals shall be stored and used properly. Workers shall be thoroughly trained, and shall wear proper clothing and use protective equipment as required.

2. Maintenance employees must be able to recognize poisonous vines, shrubs and fruits and terminate poisonous growths. Employees shall also be able to recognize poisonous insects and shall take precaution against insect bites. Use gloves and wear sturdy shoes and appropriate garments for protection at all times. Remove all foreign matter such as glass, metal and wire from the grounds being maintained. To help prevent infection, hands and arms should be scrubbed thoroughly after working outdoors. Treat all cuts and scratches received outdoors with proper antiseptic coverings.

B. Storage and Handling of Gasoline

1. GASOLINE IS A FUEL; NEVER USE IT AS A CLEANING AGENT.

2. Never smoke in fueling areas, fueling system servicing areas, maintenance areas, bulk fuel delivery areas and the like.

3. Never operate a gasoline powered engine indoors.

4. Refuel outdoors, and never dispense gasoline into a fuel tank while the engine is running or still hot.

5. Tanks or equipment parts that contain gasoline shall only be drained or dismantled out-of-doors, or in a well-ventilated area free from sources of ignition.

6. Fuel powered equipment should never be stored inside a building where vapors could reach the ignition source. Allow engines to cool before storing such equipment inside a building or other enclosure.

7. Always store gasoline in a UL/FM approved safety can.
8. Gasoline spills shall be cleaned up immediately.

9. **If gasoline is spilled on the body and clothing** (includes shoes), stay away from sources of ignition. Remove gasoline saturated clothing immediately. Wash affected areas of the skin with soap and water to avoid a skin rash or irritation. Use a safety shower, if available. Wash clothing and shoes before reuse. If the eyes are involved, lift the eyelids and flush the eyes with copious amounts of water. Use an eyewash station, if available. Seek immediate medical attention. Eyewash stations and/or safety showers are recommended for shop areas.

**C. Edgers and Nylon Cord Weed Trimmers**

Due to spin off of debris from such machines, edgers and weed trimmers shall be operated with caution to avoid the potential harm to the operator, pedestrians, and vehicular traffic. Keep equipment guards in place and in working order. Keep blades sharp. Unless the machine is turned off, do not put hands near operating parts. Wear the appropriate personal protective equipment.

**D. Mowers and Tractors**


1. **PowerLawnMowers**
   a. Operators must be well trained. If it is the first cut of the season, the operator shall review the instruction manual.
   b. Before starting, pick up rocks, glass, tree branches, twigs, and any other objects that could become a hazard if thrown out by the mower blade. Observe location of fixed objects such as pipes, lawn sprinkler heads and curbs that could damage the mower or break and spin off becoming a hazard to the operator, pedestrian traffic, or property.
   c. Make any wheel height adjustment before starting the mower. Disconnect the spark plug wire when cleaning, repairing, or inspecting the mower. Unauthorized persons are not to be in the mowing area. The operator shall make a quick inspection for loose nuts and bolts, check the engine oil level (if the mower has a separate oil reservoir), and fill the fuel tank before starting. Use a vented can with a flex spout.
   d. Wear work shoes and safety glasses. A brimmed hat and full length trousers and shirt will help protect against sunburn.
   e. Mow in daylight.
   f. Push the mower forward as much as possible because feet can be injured when pulling a mower backward. When mowing on a slope or terrace, make a series of horizontal passes perpendicular to the incline. If the operator pushes up the incline, he/she runs the risk of having the mower drift back creating a potential for a foot injury. If the operator pushes down, he/she could lose footing and fall into the mower.
g. Do not use the mower when the grass is wet and slippery. If the grass is damp or high, cut it at a slower speed (if possible), and set the cutting height higher than for dry grass, otherwise the discharge chute may clog up.

h. Guards shall be in place when ever the catcher is not in use. Rotary blades can pick up stones, pieces of wire, nails, or other objects hiding in the grass, and throw them out of the discharge chute at dangerous speeds.

i. Shut off the engine and be sure the blade has stopped completely before 1) taking off the grass catcher to empty it, 2) attempting to free obstructions from the discharge chute, 3) adjusting the cutting height, or 4) performing any operation requiring hands or feet near the blade.

2. Riding Mowers

a. The operator must be fully instructed, know the controls, and know how to stop quickly and safely. Operators shall review the owner’s manual at the start of each mowing season.

b. Clear work area of objects that might be picked up and thrown. Fixed objects that might damage the mower shall be identified. Realize that all areas cannot be reached by a riding mower and that some corners or sharp slopes will have to be mowed by a power mower. (When planning landscaping, leave enough space around new plantings for easy mower access, and allow for future growth.)

c. Disengage all attachment clutches and shift into neutral before attempting to start the engine. Disengage power to attachment(s) and stop the engine before making any repairs or adjustments, transporting attachments, or when attachments are not in use.

Exercise all precautions when leaving the vehicle unattended: disengage power takeoff, lower attachment(s), shift into neutral, set parking brake, stop engine, remove ignition key.

d. Watch for hidden hazards. When mowing, stay alert for holes in the terrain, and for other hidden hazards.

e. Do not start or stop suddenly, especially when going uphill or downhill. To ensure stability of the mower, mow up and down the face of steep slopes, never across them, because the wheelbase is longer than the thread width. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Use extreme caution when changing direction, especially on slopes.

f. Do not back up without making certain it is safe to do so. Watch out for traffic when crossing or nearing roadways.

g. When using attachments, be sure to direct discharge of material away from anything that could be hurt or damaged by it.

h. Maintain the vehicle and its attachments in good operating condition. Keep safety guards in place. Keep all nuts, bolts—especially blade mounting bolts—and screws tight, and make certain that equipment is in safe working condition.
i. If the vehicle or its attachment(s) strike a solid object, stop and inspect for damage. Damage shall be repaired before restarting and operating the equipment. Do not change the engine governor settings or over speed the engine.

3. **Garden Tractors**

a. Make certain that garden tractors have safeguards for all moving parts to reduce the hazard of contacting belts, chains, pulleys or gears. Any loose or broken parts, especially blades, should be tightened or replaced.

b. Garden tractors shall have a throttle, gears, and brakes that are accessible, can be operated smoothly and with minimum effort.

c. Make certain that safety instructions are provided with the garden tractor and that warning labels are on the machine itself. The owner's manual must read and periodically reviewed.

d. Keep unauthorized persons away from the machines and the fuel. Never allow unauthorized persons to operate a tractor, and keep them away from working areas during operation, or refueling.

e. Tractor operators shall wear sturdy, rough-soled work shoes, and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a garden tractor in bare feet, sandals, or sneakers.

f. Start garden tractors outdoors, not in a garage where carbon monoxide gas can collect.

g. Drive up and down the slopes, rather than across, for greater stability when using a garden tractor on a hill.

h. Do not smoke near a garden tractor or gasoline storage can.

i. Always turn off the machine and disconnect the spark plug wire when the machine requires adjustment.

j. Get expert servicing regularly; doing so may prevent serious injuries.

E. **Pesticides**

1. **General Precautions**

a. Insecticides, herbicides, fungicides, disinfectants, rodenticides and animal repellents are all pesticides. Responsibility for the use of pesticides begins with selection and purchase and continues until the empty pesticide container has been properly disposed.

b. Pesticide labels must include a list of 1) what the product will control, 2) directions on how to apply the pesticide, 3) a warning of potential hazards, and 4) safety measures to follow. Read the label and the Material Safety Data Sheet before mixing, handling, or applying any pesticide. Follow instructions for proper use. Don’t guess!
c. In general, poisons labeled “Danger-Poison” are highly toxic and can be lethal via inhalation, ingestion, absorption, or parenteral exposure. Poisons labeled “Warning” are moderately toxic but can be quite hazardous. Poisons labeled “Caution” have low toxicity, but could harm you if the poison is eaten or grossly misused.

d. Any restricted-use pesticide used around plants has to be applied by a Certified Pest Control Operator/Applicator according to Public Law 92.516.

e. For the safety of those handling, mixing, or applying some pesticides, medical surveillance may be required. Consult OEHS for assistance.

f. In purchasing a pesticides, buy the least toxic and use it as few times as possible. By purchasing just enough to last one season, storage and waste disposal problems are minimized.

2. Application

a. Use a pesticide only for the purposes described on the container label. Wear the proper protective equipment when using, handling, or mixing.

b. Keep pesticides in the original labeled container. Check for leaks or container damage.

c. Mix pesticides carefully and outdoors if possible. Keep pesticides off your skin, and avoid breathing dust or vapors or mists. Where required, use protective clothing and equipment, including respirators for toxic chemicals.

d. Set aside a special set of mixing tools (measuring spoons and a graduated measuring cup) and store them with your chemicals.

e. Set aside a level shelf or bench in a well-ventilated area, preferably outside, for mixing chemicals. If chemicals do spill, follow appropriate spill procedures.

f. Use the buddy system when applying dangerous pesticides.

g. Never smoke or eat while mixing or applying pesticides.

h. To minimize spray drift, avoid outside application on a windy day.

i. **If skin, clothing, or shoes become contaminated with pesticide**, remove clothing and shoes immediately. Wash affected area as of the skin with soap and water. Use a safety shower, if available. Wash clothing and shoes before reuse. If the eyes are involved, lift the eyelids and flush the eyes with copious amounts of water for 15 minutes. Use an eyewash station, if available. Seek immediate medical attention. Eyewash stations and safety showers are recommended for areas where pesticides are handled.

j. When finished using a pesticide, wash immediately with soap and water. Do not smoke, eat, or drink without first washing.

k. Never allow unauthorized personnel around treated areas, or pesticide poison mixing, storage, and disposal areas.
3. **Storage**
   
a. Store all pesticide poisons in a well-ventilated, locked area or building which has been posted with appropriate signage. Packages that are likely to be damaged by dampness shall be kept off the floor.

b. Poisons shall be kept in tightly closed, original containers. The label gives information needed in case of accidents. Do not store pesticides in soft drink or milk bottles.

c. Do not store clothing, respirators, lunches, cigarettes, or drinks with pesticide poisons. They may pick up poisonous fumes or dusts.

d. Have soap and water readily available; seconds count when washing poisons from your skin.

4. **Disposal**

Disposal of pesticides is handled exclusively through the OEHS Hazardous Waste Program.

5. **Emergency Information**

In an emergency, additional advice and information on antidotes for specific pesticides may be obtained from OEHS, or the Louisiana Poison Control Center. *(See Section 1. Emergency Response, of this manual.)*

III. **Confined Spaces**

   **A. Identification and Hazard Assessment**
   **B. Training**
   **C. Permit System**
   **D. Preventing Unauthorized Entry**
   **E. Confined Spaces with Hazardous Atmospheres Only**
   **F. University's Responsibility as Host Employer**
   **G. Rescue and Emergency Services**
   **H. Recordkeeping**

III. **Confined Spaces**

The University has practices and procedures to protect employees from hazards of entry into and work within a “permit-required confined space” in accordance with the Occupational Safety and Health Act of 1970, Subpart J, Section 1910.146. Additionally, under the “host employer” provision of the Occupational Safety and Health Administration (OSHA) standard, the University (as host employer) must ensure that contractors are properly informed whenever their employees are required to enter a permit-required confined space that is under the University’s exclusive control.
A. Identification and Hazard Assessment

1. Unit personnel shall conduct initial as well as on-going assessments of work areas in order to identify confined spaces into which the University’s employees or contractor personnel might be sent to perform work. (A unit is a department, section, center, or program, or any number or configuration of these components.)

2. When a confined space is identified, OEHS must be notified in writing by the unit. The unit contact shall complete Section A of the Confined Space Evaluation form (Form 07F-OEHS in Appendix E of this manual) and forward it to OEHS.

3. OEHS, with the assistance of the unit contact, shall determine if the confined space should be classified as a “permit-required” confined space. OEHS shall identify controls based on assessment of inherent-hazards and document entry precautions to be taken to safeguard against those hazards. Such spaces must be identified by permanent signage.

4. If conditions change in a previously identified confined space or permit-required confined space, the unit must provide written notification to OEHS. The Confined Space Evaluation form is also used by OEHS for reevaluation and hazard assessment relative to altered conditions requiring a change in permit status and entry controls.

B. Training

1. OEHS shall provide and certify the training of all University employees involved in permit-required confined space entry activities. The training shall be kept current and consistent with hazards relative to each permit-required confined space.

2. OEHS shall develop and administer proficiency tests relative to the various duties employees are required to perform, and maintain appropriate written training records that include: a) employee’s name, SSN, and entry status (i.e., entrant, attendant or entry supervisor); b) duties and responsibilities of the employee’s assigned status; c) date an employee received training; and d) signature of the employee and the OEHS trainer.

C. Permit System

Before entry is authorized into a permit-required confined space, all precautions required shall be documented in a Confined Space Entry Permit (Form 09F-OEHS in Appendix E of this manual) by an OEHS representative. The OEHS representative and entry supervisor must validate the entry permit with their signatures and the current date. Additionally, a Material Safety Data Sheet (MSDS) on any chemical or product introduced into the space in support of work being done must be attached to the entry permit.

The information provided in a Confined Space Entry Permit shall identify:

1. the permit space to be entered, the purpose of entry, the date and duration of the permit;

2. names of personnel authorized as entrant(s) and attendant(s) in the permit space;

3. hazards present in the permit space;
4. equipment required such as personal protective equipment, mechanical ventilation equipment, communications equipment, alarm systems and rescue equipment;

5. entry preparations taken to isolate the space and eliminate or control hazards prior to and for the duration of entry;

6. phone numbers for emergency communication if needed by entrants and attendants;

7. acceptable entry conditions that must be maintained for the duration of entry;

8. results of pre-entry and periodic tests/observations made to evaluate atmospheric and/or physical hazard conditions, accompanied by the initials of the observer as well as the date and time each observation was made; and

9. the signature of the OEHS representative and entry supervisor certifying the space as safe prior to entry.

10. Any additional permits, such as a hot work permit, that have been issued authorizing work in the permit space must be attached to the Confined Space Entry Permit.

D. Preventing Unauthorized Entry

The unit responsible for the confined space shall ensure that unauthorized entry is prevented by: 1) providing notification to employees of the location(s) regarding the confined space, and, where practicable, 2) conspicuously posting durable signs or stenciling on or proximate to each entrance that read: DANGER, PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER, and, whenever practicable, 3) securing such spaces with locks and/or placement of barriers preventing unauthorized entry. Contact OEHS or Facilities Services for permit required confined spaces listing.

E. Confined Spaces with Hazardous Atmospheres Only

1. Even when the only hazard posed by a confined space is an actual or potential hazardous atmosphere, an entry permit is required. However, continuous forced air ventilation equipment must be sufficient to control the atmospheric hazard and maintain safe entry conditions. (In such cases, Rescue and Emergency Services defined in III.G below will not apply.)

2. The unit responsible for the confined space shall provide and set up forced air ventilation equipment. OEHS and entry supervisor shall verify the efficacy of forced air ventilation in these spaces prior to entry. Maintenance of safe atmospheric conditions throughout the duration of the entry shall be verified through continuous or periodic sampling conducted by trained personnel (i.e., entry supervisor or attendant) using calibrated direct-reading instruments provided by OEHS.

3. Confined spaces with only hazardous atmospheres shall be continuously or periodically sampled during entry for: a) oxygen content, b) flammable gases and vapors, and c) potential toxic air contaminants that might be inherent in the space or be produced as a result of operations being conducted within the space.

4. Heat stress shall be considered a potential atmospheric hazard. The unit responsible for the confined space shall take all practicable measures to reduce and maintain temperatures in the confined space within acceptable limits in order to control heat stress on personnel working
inside. For example, such measures may include flushing a vessel with cooling water to remove latent heat, allowing a sufficient cool-down period prior to entry, and application of forced air ventilation for a sufficient period of time to reduce internal temperatures.

5. In evaluating potential atmospheric hazards, including heat stress, OEHS shall apply guidelines promulgated by the American Conference of Governmental Industrial Hygienists (ACGIH) in the absence of a specific OSHA standard.

F. University’s Responsibility as Host Employer

1. Contractor work that involves entry into a permit-required confined space requires completion of a “Confined Space Hazard Addendum” form (Form 08F-OEHS, in Appendix E of this manual) by Facilities Services personnel. This document is part of the contract documents.

2. Facilities Services is responsible for notifying OEHS before commencement of any permit required confined space work.

3. Before entry into a permit required confined space, OEHS shall apprise the contractor of inherent hazards and of any experience the University has had with the confined space in which the contractor would be working.

4. The contractor shall be notified of all hazards and precautions that affect the permit required confined space as documented in a completed Confined Space Entry Permit (Form 09F-OEHS in Appendix E of this manual).

5. The Confined Space Entry Permit must be dated and signed by an OEHS representative and the entry supervisor before entry is authorized.

6. The University is not responsible for providing any equipment or personnel needed by the contractor when entry involves only contractor personnel. This includes, but is not limited to, personal protective equipment, ventilation equipment, sampling/monitoring equipment, communications equipment, rescue equipment and emergency services.

7. If both contractor and University employees shall be working together in the same PRCS, OEHS shall oversee the coordination of entry operations. Provisions for needed equipment and personnel shall be arranged through mutual agreement among Facilities Services, contractor, and OEHS.

G. Rescue and Emergency Services

If it is necessary for University personnel to enter a permit-required confined space, other than that described in III.E, Confined Spaces with Hazardous Atmospheres Only, above, provisions must be made for rescue and emergency services. University personnel shall provide rescue and emergency services only when it can be assured that rescue of authorized entrants can be achieved by means other than entry into the space. This means that rescue must be accomplished by a retrieval system of non-entry personnel. Retrieval system equipment must be approved by OEHS, with the cost of such equipment to be borne by the unit responsible for the confined space. OEHS shall otherwise identify, evaluate and recommend outside services for rescue and emergency services.
H. Recordkeeping

Records that must be retained in reference to confined space entry are to be distributed as follows:

Confined Space Evaluation
(07F-OEHS)  Original to OEHS Uptown Office

Confined Space Entry Permit
(09F-OEHS)  Copy to OEHS, TUHSC Police, and to Unit responsible for the Confined Space
(Original to be posted at site)

Confined Space Hazard Addendum
(08F-OEHS)  Original to Unit responsible for the Confined Space
(to be attached to contract)

Confined space entry permits and evaluations should be kept at the work site for the duration of entry and for a period thereafter as required by law. A new permit must be obtained if entry has to be extended beyond the day and time authorized on the permit.

IV. Ladders and Scaffolds

A. Portable Ladders

1. Only standard manufactured ladders constructed in accordance with ANSI A14.5, and so labeled, shall be purchased and used. Job-built ladders are not permitted.

2. The following practices shall be observed:
   a. The base of each ladder shall be set firmly and level. Workers shall never attempt to move a ladder while they are on it, and shall avoid over reaching; both actions may cause a ladder to fall as will working from a ladder in a high wind. When positioning the ladder, use a 1:4 ration: position the bottom one foot away from the structure for every four feet of ladder run.
   b. Access ways to and from ladders shall be kept clear. Ladder rungs or steps shall be free of mud and other slippery material. Check shoe soles for slippery material before climbing ladders.
c. Ladders shall not be used as supports for scaffold boards without using ladder jacks. Ladder jack scaffolds are acceptable for light duty use only.

d. Ladders shall belong enough for workers to perform their functions without climbing higher than the third step or rung from the top.

e. A ladder shall never be set up in a walkway, driveway, or in front of a door where the swing of the door could strike the ladder. If such placement is necessary, barricades and signage should be used and a worker (wearing a hard hat) should be stationed at the foot of the ladder to keep the ladder from being struck. Barricades and signage will work to protect pedestrians from being struck by dropped tools or materials.

f. Employees shall face the ladder and use both hands when climbing or descending. Tools and materials shall be raised and lowered by hand lines or other means; they shall not be carried by the employee on the ladder unless they are first placed in a tool belt.

g. Step ladders shall be used only in a fully opened position with spreader bars locked.

h. Extension Ladders shall extend three feet above the working or access level and be secured at or near the top. They shall be placed so that the base is one foot from the wall or structure supporting the top of the ladder for each four feet of perpendicular rise to the top most support point of the ladder. Metal Ladders must not be used around energized electrical equipment. When moving extension ladders, precautions must be taken to avoid overhead power lines.

i. If the ladder is in need of repair, it must be immediately taken out of service for repair or replacement.

B. Scaffolds

1. Light Duty Metal Scaffolds

   a. The strength of rusted equipment may be impaired and therefore should not be used. Scaffolds and their components shall be capable of supporting the maximum intended load. Materials being hoisted onto a scaffold shall have a tag line. Employees shall not work on scaffolds during storms or high winds. Overhead protection shall be provided for men on a scaffold exposed to overhead hazards.

   b. Provide adequate sills for scaffold posts and use base plates. The footing shall be capable of carrying the maximum intended load, without settling or displacement.

   c. Use adjusting screws instead of blocking to adjust to uneven grade conditions. In no case shall the exposed thread exceed 12 inches.

   d. Plumb and level all scaffolds as the erection proceeds. Do not force braces to fit; level the scaffold until proper fit can be made easily.

   e. On wall scaffolds place and maintain anchors securely between structure and scaffold at least every 20' of length and 20' of height.

   f. Free standing scaffold towers must be restrained from tipping by guying or other means.
g. Proper guard rails, midrails, and toeboards must be used on all scaffolds where working levels are 6’ or more above adjacent working surfaces.

h. Use ladders, not cross braces, when climbing scaffolds.

i. Do not use ladders or makeshift devices on top of scaffolds to increase the height.


2. **Planking**

   a. Use only lumber that is properly inspected and graded as scaffold plank.

   b. Planking must overlap at least 12" and extend 6" beyond center of supports, or be cleated at both ends to prevent sliding off supports.

   c. Scaffold planks must extend over their end supports not less than 6' nor more than 12'.

   d. Secure plank to scaffold.

   e. Provide a working surface of not less than 20" in width. For scaffold base width in excess of 30", additional planking shall be provided.

3. **Platform, Guardrails, and Stairway Handrails**

   a. Handrails shall be 2" x 4" or 1" x 4" nailed at right angles; platform handrails shall be 42" (but not more than 45") above platform; stairway handrails shall be 30" to 34" above nose of tread.

   b. Posts shall be 2" x 4" or heavier and spaced not more than eight feet apart.

   c. Midrails shall be 1" x 6" or wider; spaced midway between platform and top rail on platforms or midway between nose of tread and top rail on stairway; midrails to be nailed inside of posts.

   d. Toeboard shall be 1" x 6" or wider, placed along floor of platform and nailed to inside of posts.

   e. Scaffolds shall be provided with a screen between the toeboard and the guardrail, extending along the entire opening, consisting of No 18 gauge U.S. Standard Wire one-half-inch mesh or the equivalent, where persons are required to work or pass under the scaffolds.
V. Construction

A. Painting

1. To reduce evaporation, keep containers of coatings and solvents covered when not in use. This is especially important if flammable materials are being used.

2. Use flammable coatings and solvents cautiously; avoid ignition sources. Cleaning rags and paper towels coated with these materials present a spontaneous combustion hazard. Coatings and solvents shall be temporarily stored in covered metal containers and at the end of each work day they shall be pro perly disposed. Such materials shall not be left inside any building overnight unless in a UL or FM listed storage cabinet specifically designed for this purpose.

3. Select coatings with low volatile organic compounds for indoor use. Avoid using coatings in enclosed areas that are not well ventilated.

4. Familiarize yourself with warnings on container labels and Material Safety Data Sheets. Some coatings and solvents contain toxic chemicals that present inhalation, absorption, and contact (e.g., eyes, skin) hazards. Make certain you understand the hazards and use appropriate personal protective equipment to eliminate associated exposures.

5. Do not dump cleaning solvents or coating materials into building drains (e.g., sinks, floor drains), outside on the ground, or into storm water drains. Containers of dried coating materials (i.e., all solvent must be evaporated with only dry hard pigment remaining) can be disposed of in regular trash containers (e.g., dumpsters).

B. Excavations (Trenching, Shoring, Benching, Shielding, Sloping, and Other Systems that Provide Necessary Protection)

In accordance with the requirements of the Occupational Safety and Health Act of 1970, the following procedures for excavations have been established per OSHA 29 CFR Subpart P Excavations, Sections 1926.650 through 1926.652.

1. Procedures

   a. Before beginning any excavation (trenching, shoring, benching, shielding, sloping, etc.), remove or support surface encumbrances that are located so as to create a hazard.
b. The location of utility installations, such as steam, condensate, sewer, telephone, electrical, water, or any other underground installations that may reasonably be expected to be encountered during excavation work, shall be determined prior to opening an excavation. This may require coordination with local utility companies.

c. Safe ingress and egress for equipment and personnel shall be provided as necessary in accordance with OSHA 1926.651 (c)(1) and (2). Trenches four feet deep or more must have an adequate means of exit such as ladders or steps located so as to require no more than 25 feet of lateral travel.

d. Employee exposure to vehicular traffic and falling loads shall be controlled in accordance with OSHA 1926.651 (d) and (e).

e. A warning system, such as barricades, hand or mechanical signals, or stop logs, shall be established to safeguard the operation of mobile equipment adjacent to or which may approach the edge of an excavation in accordance with OSHA 1926.651 (f).

f. Where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation, provisions shall be made for testing and controls in accordance with OSHA 1926.651 (g)(1). Emergency rescue equipment shall be provided in accordance with OSHA 1926.651 (g)(2).

g. Employees shall be protected from the hazards associated with water accumulation. These precautions will vary with each situation and shall be established and monitored by a competent person in accordance with OSHA 1926.651 (h)(1) through (3). All employees doing this type of work must be properly trained and fully understand the job’s requirements.

h. The stability of adjacent structures shall be considered in accordance with OSHA 1926.651 (i)(1)-(3) prior to beginning any excavation work. Special precautions necessitating the review and/or approval of a registered professional engineer may be required.

i. Adequate fall protection in accordance with OSHA 1926.651 (l) shall be provided where employees or equipment are required or permitted to cross an excavation. As long as any hazards exist, appropriate warnings and barriers shall be arranged to prevent persons other than employees from venturing into the work area both during and after working hours as long as a hazard exists. This may require the use of one or a combination of the following: barricades, cautionary/warning signs, perimeter boundary tape, area illumination, and warning lights.

j. Daily inspections of excavations, adjacent areas and protective systems shall be made by a competent person in accordance with OSHA 1926.651 (k). Upon finding any indication of hazardous conditions or failure of protective systems, employees shall be removed from the hazardous area until necessary precautions have been taken and such material or equipment is evaluated by a registered professional engineer (OSHA 1926.651 (d) and (e)).
2. **Protective Systems**

Employees shall be protected from moving ground or cave-in of loose rock or soil from the faces and walls of an excavation or trench greater than five feet deep through implementation of a protective system such as a shoring system, sloping of the ground, or some other equivalent means in accordance with OSHA 1926.652 (b) and/or (c). Such systems are not required where excavations are made in solid rock or are less than five feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

In all excavations where employees may be required to enter, excavated or other material must be effectively stored and retained at least two feet or more from the edge of the excavation.

**Requirements for Protective Systems:**

a. Selection of a protective system shall be made by a competent person based on soil classification as defined in accordance with OSHA 29 CFR, Part 1926, Subpart P, Appendix A. Due to the variability of soil conditions on the Uptown Campus, all soil is assumed to be Type C. For all excavations requiring implementation of a protective system, the pre-engineered shoring system shall be used in accordance with the manufacturer’s recommendations.

b. The materials and equipment used for protective systems must meet the requirements of 1926.652(d). The materials and equipment must be free from damage and defects. The manufacturer’s recommendations must be followed for the use and main tenance of manufactured materials and equipment.

c. Installation and removal of support systems must be performed in accordance with 1926.652(e).

d. When shield systems are utilized, the requirements of 1926.652(g) must be met. These requirements include compliance with shield systems load limits, employee protection during entry, exit from shield protected areas, and prohibition of employees in shields during installation, vertical movement of the shield, or removal of the shield.

C. **Plumbing**

Plumbers or any personnel handling plumbing shall be aware of the following guidelines:

1. Plumbers who may be exposed to blood or other potentially infectious materials (OPIM), shall follow the University’s Exposure Control Plan for Bloodborne Pathogens. Maintenance personnel shall assume that every lab, bath, and restroom, etc. is contaminated. Workers are advised to wear appropriate protective equipment. If possible, a 1:10 dilution of household bleach shall be used to disinfect any tools or equipment that may become contaminated. After disinfection, equipment shall be rinsed with water and dried to prevent rusting.

2. Maintenance personnel shall read all warnings indicated on caution or other type of signage.

3. Caution shall be exercised in dismantling equipment such as lab sinks, drains and pipes (which may contain hazardous chemicals), fume hoods (which may contain asbestos or hazardous chemicals), glove boxes (which may contain infectious materials), etc. Check with the principal investigator in charge to ascertain the specific use of the equipment.
4. Do not repair or remove a fume hood determined to have been used in work involving perchloric acid or nitrates; doing so without proper wash down of the hood and duct work may result in an explosion. Contact OEHS before beginning such work.

- (See Section 30. Laboratory Safety, of this manual for laboratory close-out guidelines regarding the dismantling and removal of lab equipment.)

D. Hot Work (Welding, Cutting, Soldering, Burning)

Control of fuel exposure to ignition sources during renovation, repair, or maintenance activities conducted by any of the University’s maintenance units or any outside contractor, shall be accomplished through issuance of a hot work permit. The Hot Work Permit System is intended a) to ensure that appropriate precautions are observed in the conduct of hot work activities, and b) to provide information on such activities to units that would respond to a fire emergency in the area where the hot work is being conducted.

1. Procedures

a. A Hot Work Permit (aka, Cutting-Welding-Hot Work Permit) form (Form 10F-OEHS in Appendix E of this manual) must be completed at least 24 hours prior to start of work by the employee in charge of the hot work activity to allow time for notifying emergency back-up sources. In the event emergency repairs involving hot work must be performed, the permit must be completed as soon as possible. Hot work permits may be obtained from OEHS or Facilities Services.

b. Prior to the start or resumption of hot work, the responsible employee must conduct an inspection of the area and consider the precautions listed on the reverse side of the permit form as they apply to the specific job. Further, he/she must instruct (or in the case of a contractor, ensure that instructions are given to) all workmen in the hot work area as to the nature, scope, and duration of the hot work as well as precautions to be observed.

c. When Fire Detection Systems are Affected by Hot Work Operations

1) Area in proximity to the hot work area:

   If there are smoke detectors in proximity to the hot work area that are likely to be activated by smoke and/or fumes during operations, the person initiating the permit must verbally notify Facilities Services prior to start of work. Only Facilities Services personnel are authorized to temporarily cover detection devices. If detectors or other detection systems are to be deactivated, a fire watch must be conducted.

2) Responsibility for Fire Detection/Alarm Systems

   Generally, Facilities Services is the unit responsible for fire detection/alarm systems at Tulane facilities. However, the Controls Engineer, Security, Fire and Life Safety (Uptown) or OEHS may also share responsibility for these systems at the direction of Facilities Services.
d. The employee responsible for initiating the permit shall ensure that the original is retained at the work site during hot work operations (the permit defines date and time allowed for the work) and that photocopies (front only) are distributed promptly to Facilities Services, Security, Fire and Life Safety (Uptown), and OEHS. Security shall provide surveillance for smoldering fires for at least one hour after hot work completion. At TNPRC, Facilities Services shall provide surveillance. If the hot work is to continue for several days, checks for smoldering fires should be done at the completion of each day.

At TUHSC, the original permit shall be taken to Security at the completion of hot work. At TNPRC, the original permit must be taken to the Facilities Services at the completion of work.

e. Facilities Services shall retain its photocopy of the permit for a period of at least one week past the estimated completion date shown on the permit. OEHS shall maintain a file of all hot work permits for inspection purposes for a period of two years.

f. If, for any reason, the permitted hot work is not accomplished by the estimated completion date specified, the responsible employee must secure another permit for the extended period.

VI. Materials Handling

A. Manual Lifting and Carrying

1. Assess the load and your ability to carry it. Consider its size, weight, and shape in the context of your physical ability and condition. Consider the distance to be traveled and the length of time that the grip will have to be maintained. Determine whether or not the size of the load will obstruct your vision while carrying it. If your assessment indicates that you will not be able to handle the load, get help in handling the material, or in lifting it onto a hand truck, luggage cart, or dolly that you can manage on your own. If you are going to carry the load, evaluate the route to be taken to ensure that it is free of tripping hazards or obstructions.

2. Position yourself close to the object or load to be lifted and place your feet shoulder’s width apart for proper balance. Grip the item firmly, placing your hands and fingers so as to avoid striking them against other objects along your path of movement or having them caught beneath as you lower the item. Bend your knees, keeping your back straight (do not stoop) as you lift or lower the object close to your body. Avoid twisting movements and do not over-reach or stretch.
3. If you are being assisted in carrying the load, coordinate movements with your partner to avoid sudden shifts in the load, and, if the haul is of some distance, agree on and take rest stops along the way. This is especially important when negotiating stairs and ramps.

4. To place the load or object on a bench or table, set it on the edge and push it far enough onto the support to ensure that it will not fall. The object may then be moved by pushing it with the hands and body from a position in front of the object.

5. It is especially important that an object or load be securely placed on a bench or other support so that it will not fall, tip over, or roll off. Supports shall be correctly placed and strong enough to carry the load. Heavy objects, like lathe chucks, dies, and other jigs and fixtures shall be stored at approximately waist height. Protect your feet by wearing safety shoes when lifting or carrying heavy objects.

6. To raise an object above shoulder height, bend knees and lift first to waist height, then as the load is moved up further, shift the position of the hands so that the object can be boosted; straightened the knees as the object is lifted or shifted to the shoulders.

7. To change direction, lift the object to the carrying position, turn the entire body, including the feet. Avoid twisting the body. In repetitive work, the person and the material shall both be positioned to prevent the person from twisting his body when moving the material.

8. “Slide” objects into a tight space, keeping hands in the clear.

B. **Powered Industrial Trucks (Rider Operated and Walk Behind)**

1. **Safeguards**
   a. Trucks capable of lifting loads higher than the operator's head (e.g., front end loaders, forklifts) or operated in areas where there is a hazard from falling objects must be equipped with an overhead guard that shall conform to American National Standards Institute B56.1, “Safety Standard for Low Lift and High Lift Trucks.” All overhead guards should be attached to the rear of the truck body as well as the front portion of the body (not the mast.)

b. Load backrest extensions shall always be used when the type of load presents a hazard to the operator. The top of a load shall not exceed the height of the backrest.

c. Trucks shall be equipped with platforms extending beyond the operator's position, strong enough to withstand a compression load equal to the weight of the loaded vehicle applied along the longitudinal axis of the truck against flat vertical surface.

d. Additional operator enclosures are not recommended. However, should additional enclosures be provided, they shall not prevent easy ingress or egress.

e. Exposed tires should have guards that will stop particles from being thrown at the operator or pedestrian traffic. Hazardous moving parts, such as chains and sprocket drives and exposed gears, should be guarded to protect the operator in his/her normal operating position.
f. Every powered industrial truck should carry a name plate showing the weight of the truck and its rated capacity as specified by the ANSI B56.1.

g. Powered industrial trucks should have a horn, a reverse (back up) alarm, safety belts that should be worn by the operator, and should carry an ABC fire extinguisher. Steering wheel knobs are prohibited.

h. Forks should be locked to the carriage and the fork extension (if used) should be designed to prevent unintentional lifting of the toe or displacement of the fork extension.

i. Lift trucks should have means or be equipped with mechanical hoist and tilt mechanisms to prevent over travel of hoist and tilt motions. Hydraulically driven lifting systems should have a relief valve and suitable stops provided to prevent over travel.

2. Operation

a. General Precautions

1) Only authorized employees are allowed to operate powered industrial trucks. All safety rules and regulations are to be observed by truck operators.

2) Operate at low speed consistent with load and rolling surface conditions, but never in excess of five miles per hour. Face the direction of travel at all times.

3) Operator should come to a stop at blind corners and before passing through doorways, sounding the horn before proceeding. At least three truck lengths should be kept between moving vehicles (conditions such as wet roads may require more distance between vehicles). A truck should not pass another at intersections, blind spots, or other dangerous locations.

4) Avoid quick starts, jerky stops, or quick turns at excessive speed. Use extreme caution when operating on turns, ramps, grades, or inclines. Reverse control should never be used for braking.

5) Do not use trucks for any purpose other than that for which they are designed, e.g., bumping skids, pushing piles of material out of the way, using forks as a hoist, etc.

6) Dock plates or bridge plates should be anchored before a truck is allowed to be driven on them.

7) Trucks should cross railroad tracks diagonally and park at least six feet away from the nearest rail.

8) Keep all extinguishers inside operating section of truck at all times.

9) Internal combustion engine powered trucks should not be operated in unventilated, enclosed areas because of the potential for carbon monoxide poisoning.
b. **Grades**

1) Always drive with the load pointing upgrade, unless a bulky load interferes with visibility.

2) Trucks should ascend or descend grades slowly. When ascending or descending grades in excess of 10 percent, loaded trucks should be driven with the load upgrade. Unloaded trucks should be operated on all grades with the load-engaging means downgrade.

3) On all grades, the load-and load-engaging means should be tilted back, if applicable, and raised only as far as necessary to clear the road surface. Low gear or slowest speed should be used when the truck is descending a grade. The operator should keep clear of the edge of loading docks and ramps, and never make a turn on a ramp.

c. **Loads/Loading/Unloading**

1) All loads, whether on trucks, trailers, skids or pallets, should be stable. Materials should be neatly piled and crosstied if the shape permits.

2) Irregularly shaped objects should be loaded so that they cannot roll or fall off.

3) Heavy, odd shaped objects should be placed with the weight as low as possible. Round objects, like pipe or shafting, should be locked and, if necessary, tied so that they cannot roll.

4) Tilt back all loads to steady and secure load.

5) If a bulky load cannot be lowered enough to prevent view obstruction, the operator should drive the truck backward for a clear view.

6) To unload a large case of similar objects without a pallet, the operator should first drive into position for stacking. He should then lower the load onto a base having a block near the edge; withdraw the forks so that only their tips hold up the end of the load; withdraw the block; tilt the uprights forward and back away.

7) In attempting to pick up a palletized load, the forks should be fully and squarely seated in the pallet, an equal distance from the center stringers and well out toward the sides. Forks to be inserted in a pallet should be level, not tilted forward or backward.

8) When raising or lowering loads while standing still, the operator should not leave the truck in gear with the clutch depressed; he/she should return the shift to neutral and disengage the clutch.

9) Highway trucks, trailers, and railroad cars should have their brakes set and their wheels securely blocked by wheel chocks while they are being loaded or unloaded by a powered industrial truck.

10) When standard forks are used to pick up round objects, such as rolls or drums, care must be taken that the tips do not damage the load, or push it against workers. The uprights should first be tilted so that the tips of the forks touch the floor and then moved forward.
so that the forks can slide under the object. Tilting the uplifts backward will then cause
the load to roll back against the vertical face of the forks and/or carriage and the load
backrest extension creating a secure carrying position. A block or wedge should be
placed against the drum or roll.

3. **Lift Trucks**

   a. Operators of lift trucks should not move improperly loaded skids or pallets, broken pallets,
      or loads too heavy for the truck.

   b. Using a lift truck as an elevator for employees should be done *only* if a work platform
      securely seated on the forks is fastened to the vertical face, and provided with handrails and
      toeboards. The truck should also have an overhead guard for the operator’s protection. The
      operator must not leave the controls while the truck is used as a man lift.

   c. Placing extra weight on the rear of a lift truck to counterbalance an overload shall not be
      permitted, as it may strain chains, forks, tires, axles and motor, and also may cause
      accidents.

   d. Side stability is a critical factor in making turns at speed or on a slope. Back tilt of uprights
      reduces side stability on high lifts, and allowance should be made for this factor.

4. **Unattended or Parked Trucks**

   A truck should be left unattended only after the load-engaging means has been placed in a
   lowered and inoperative position, the controls have been put in neutral, the power shut off, the
   brakes set, and the key removed or the connector plug pulled. This should be done when an
   operator is not in line of sight of his truck or is 25 feet or more away from the truck. A truck
   should never be parked on an incline, or parked so as to obstruct an aisle, doorway, material, or
   equipment to which others may require access.

5. **Passengers and Pedestrians**

   Passengers must never be permitted to ride on a truck unless there is a seat provided specifically
   for that purpose (*see VII.B.2* below). The operator must take responsibility for keeping riders
   off. Additionally, operators must be cautious when operating a truck near pedestrian traffic.

6. **Training**

   Requirements for training of powered industrial truck operators are outlined in OSHA 29 CFR
   1910.178, “Powered Industrial Trucks,” and include a combination of formal instruction,
   practical training, and evaluation of the operator’s performance in the workplace. The required
   training must be successfully completed before the operator is allowed to use the truck on his/her
   own. Performance evaluations must be conducted at least once every three years.

7. **Retraining**

   Operator retraining must be provided if the operator: a) has been observed to operate the vehicle
   in an unsafe manner; b) has been involved in an accident or near-miss incident; c) has received
   an evaluation indicating that he/she is not operating the truck safely; d) is assigned to drive a
   different type of truck; or e) if a condition in the workplace changes that would affect the safe
   operation of the truck.
8. **Inspections and Maintenance**

All powered industrial trucks (electrical, gasoline, or liquified petroleum operated) must be examined at least daily before being placed into service. If the truck is used on a round-the-clock basis, it must be examined after each shift. The vehicle must not be put into service if conditions that could adversely affect the safety of the vehicle are noted. Defects must be immediately reported and corrected. All repairs are to be made by authorized personnel.

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**MANUAL LIFTING AND CARRYING**

Assess the load and your ability to carry it. Consider its size, weight, and shape in the context of your physical ability and condition. Consider the distance to be traveled and the length of time that the grip will have to be maintained. Determine whether or not the size of the load will obstruct your vision while carrying it. If your assessment indicates that you will not be able to handle the load, get help in handling the material, or in lifting it onto a hand truck, luggage cart, or dolly that you can manage on your own. If you are going to carry the load, evaluate the route to be taken to ensure that it is free of tripping hazards or obstructions.

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**VII. Transportation**

A. “Slow Moving Vehicle” Emblem

B. Automobiles, Trucks and Motorized Vehicles

C. Vehicle Repair and Maintenance Shops

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**VII. TRANSPORTATION**

A. “Slow Moving Vehicle” Emblem

All vehicles and/or trailers pulled by vehicles that are designed to move 25 mph or less and travel public and/or University roads must have a “slow moving vehicle” emblem affixed to the rear of the vehicle as determined by ANSI B114.1-1971.
B. **Automobiles, Trucks, and Motorized Vehicles**

1. All automobiles and trucks are required to be equipped with seatbelts that shall be worn by all occupants. Some specialized motorized vehicles (e.g., fork-lifts, tractors) may require that seatbelts be worn by the operator.

2. Passengers are allowed to ride in or on vehicles only if there is a seat provided specifically for that purpose. Riding in the rear of trucks, standing or sitting on fenders, rear, or sides of vehicles, equipment or golf carts is prohibited.

3. Materials being transported in or on vehicles must be properly secured against shifting. Loose materials (e.g., construction debris) in open vehicles shall be covered during transport. Vehicles shall not be overloaded.

C. **Vehicle Repair and Maintenance Shops**

As vehicles, trucks, and autos (and other rolling stock) are essential for transportation of University personnel and materials, maintenance and repair of motorized equipment is crucial to vehicle safety. Supervisors of vehicle repair and maintenance shops must take an active role in shop safety.

Items that bear considerable attention in shop maintenance include but are not limited to:

**Air Pressure.** Air pressure used for cleaning shall not exceed 30 psi at discharge nozzle.

**Battery Charger.** Employees shall be furnished and required to use protective equipment (glasses, gloves and aprons) when charging batteries with acid. Manufacturer's recommendations for charging rate shall be carefully followed to prevent buildup of potentially explosive hydrogen gas. Metal tools, chains, etc., shall be kept well away from batteries to prevent a possible short circuit that could result in burns and/or explosion. Floors shall be designed for protection against slips and falls and electrical shock.

**Bench Grinder** must be securely fastened to stand or work bench. Both abrasive and wire wheels must be protected by enclosure guards. The work rest shall be adjusted to maintain a clearance of 1/8" to wheel. A chip guard shall be used and eye protection worn.

**Chainhoist/Floor Crane.** Chains and/or cables shall be inspected frequently by the operator for wear. Electrical controls shall operate smoothly; hoist or crane capacity must be visible to operator.

**Fans.** Shop fans (including blowers) must be protected by a metal mesh guard with openings no more than ½ square inch if fan is located within seven feet above floor.

**Fire Protection.** Shop shall be equipped with ABC extinguishers that are properly tagged and inspected. Approved safety cans shall be available for disposing of oily rags and towels.

**Floors** shall be free of oil and grease. Absorbent compound shall be available for covering oil and grease spots.

**Hand Tools** must be kept clean and in good repair. Defective tools shall be discarded if they cannot be repaired.
**Jacks.** If a jack is used to raise a vehicle, the vehicle must be supported by metal jack stands before anyone works under the vehicle.

**Parts Cleaning.** Avoid prolonged contact with degreasers or wear gloves to protect hands. Gasoline shall never be used as a cleaning solvent. Combustible liquid solvents shall be used in cleaning (dip) tanks that are provided with a self-closing lid, held open by a fusible link designed to melt under fire conditions.

**Tire Inflation.** Tires with split or locking rims shall be inflated in a steel airing cage.

**Ventilation.** The shop shall be well ventilated. Vehicles shall not be operated inside shop buildings unless there is provision for exhaust to the outside to avoid carbon monoxide hazard.

**Work Benches** shall be neat and clear of removed parts and tools not in use.

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**EXTENSION LADDERS**

Extension ladders shall extend three feet above the working or access level and be secured at or near the top. They shall be placed so that the base is one foot from the wall or structure supporting the top of the ladder for each four feet of perpendicular rise to the top most support point of the ladder. **Metal ladders must not be used around energized electrical equipment.** When moving extension ladders, precautions must be taken to avoid overhead power lines.

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**VIII. Equipment Lockout/Tagout**

A. Lockout

B. Tagout

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**VIII. EQUIPMENT LOCKOUT/TAGOUT**

During maintenance and/or repair work on equipment, the possibility of the equipment being energized and making an unexpected movement must be eliminated or reduced to prevent injury to persons in the immediate area as well as those operating the equipment. Lockout refers to the neutralization of *all* energy sources to a machine so that a **zero mechanical state** (ZMS) is obtained. Tagout involves placing a tag on any machinery receiving maintenance or repair work.
University policy and procedures for lockout/tagout comply with OSHA 29 CFR, 1910.147, “Control of Hazardous Energy (Lockout/Tagout).” The standard provides for the safety of employees from unexpected startup of machines or equipment or release of hazardous energy while they are performing servicing or maintenance. It applies to any source of mechanical, hydraulic, pneumatic, chemical, thermal, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 covers electrical hazards, and 29 CFR Part 1910.333 contains specific lockout/tagout provisions for electrical hazards.

A. Lockout

Lockout procedures to attain ZMS afford maximum protection against unexpected mechanical movement. Usually, procedures involve the removal of electrical energy from a machine; however, depending upon the type of equipment, sources other than electrical must be considered: 1) hydraulic fluids under pressure; 2) compressed air; 3) energy stored in springs; 4) potential energy from suspended parts; 5) any other sources that might cause unexpected mechanical movement. Achieving zero mechanical state, therefore, includes not only the locking out of electrical energy but may also include the isolation, blocking, support, restraint, containment, or control of all other energy sources (kinetic and potential) to guard against the unexpected release of energy.

Lockout of equipment involves the use of padlocks on electrical switches and pressurized fluid or compressed air shut-off valves. In some cases where stored or potential energy may create a hazardous situation, other lockout methods shall be used. These methods may incorporate holding a machine member against gravity or a spring force by blocking, suspension, or brackets, or pins designed specifically for that purpose.

Lockout Procedures

Following are lockout procedures to be followed by all maintenance personnel working on machinery:

1. Alert the operator or person(s) whose job requires him/her to work in an area in which service or maintenance is being performed that lockout procedures are commencing.

2. Before starting work on an engine or motor, line shaft, or other power transmission equipment, or power-driven machine, make sure it cannot be set in motion without your permission.

3. Turn the electrical safety switch or valve to the off or closed position and place your own padlock on the control switch, lever, or valve, even if someone has locked the control before you. Protection means installing your lock.

4. If the padlock will not place the machine into a ZMS, then the mechanism may have to be blocked or secured in some effective manner. The foreman, superintendent, or OEHS may have to be consulted if ZMS cannot be obtained.

5. When work is completed, remove your padlock or device. Never permit someone else to remove it for you, and be sure you are not exposing another person to danger by removing the padlock.

6. If you lose the key to your padlock, report the loss immediately to your foreman or supervisor and get a new padlock.
7. Only key-operated locks shall be used and no two key configurations shall be the same. For identification, locks may be color coded to indicate the shop or differentiate the shifts. Each lock shall be stamped with the employee's name or specifically numbered. One lock and one key shall be issued to each individual. Additional locks may be signed out to employees as needed. The foreman shall have a master list of the lock numbers and shall keep all extra keys. In no instance shall the foreman lend the master key.

8. Where a lockout system is to be set up, equipment shall have built-in locking devices. Equipment must be designed for the insertion of padlocks or have attachments on which locks can be placed. Methods include use of special tongues that hold several locks or sliding rods that can be extended and then locked to prevent operation of control handles. This is especially important if two or more men are to work on the same piece of machinery.

B. Tagout

Tagout, which involves placing a tag on any machinery receiving maintenance or repair work, requires the use of appropriate cautionary signage as, for example:

CAUTION - DO NOT OPERATE
CAUTION - DEFECTIVE - DO NOT USE
DANGER - OUT OF ORDER
CAUTION - DO NOT OPEN VALVE

or any other suitable warning. However, the warning must be approved by OEHS and must contain the following: 1) description of the work being done, 2) name of the employee performing the work, 3) foreman's name, and 4) shop or section.

Tags must be used in all lockout procedures but may not be used as a sole means of placing machinery in a zero mechanical state. Tags must also be used with all portable power tools such as drills or saws, even when they are removed from use for maintenance or repair. Stationary power equipment that has power cords must also be tagged even though lockout of these items would simply involve unplugging the cord.

End of Text — Return to Section 24 Page 1 Outline
TULANE UNIVERSITY
ANIMAL HANDLER HEALTH SURVEILLANCE PROGRAM
DECLINATION OF MEDICAL EXAMINATION (“DECLINATION” FORM)

Information provided in this document is considered CONFIDENTIAL. Please return the ORIGINAL completed form to the Office of Environmental Health and Safety (OEHS), TW-16. If you have any questions, please call the OEHS at 988-5486.

Select either option below:

☐ I acknowledge that I have completed the Risk Assessment and History Form (RAHF) as required for participation in the Animal Handler Health Surveillance Program at Tulane University. On the form under History, I checked “YES” which indicates that I do experience the designated symptom(s) when working with or exposed to animals and/or I checked “YES” to being diagnosed or otherwise identified as having one or more of the listed conditions. At this time, I do not want a medical examination.

☐ I acknowledge that I have NOT completed the Risk Assessment and History Form (RAHF) but I do understand the risks and hazards of animal research. At this time, I do not want a medical examination.

Please complete table and print legibly

<table>
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<tr>
<th>Name</th>
<th>Date of Birth (mm/dd/yy)</th>
<th>Email</th>
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</thead>
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<tr>
<td>Principal Investigator/Supervisor/Professor</td>
<td>PI/Supv/Professor Phone</td>
<td>PI/Supv/Professor Email</td>
</tr>
<tr>
<td>Campus</td>
<td>Department</td>
<td>Mail Code</td>
</tr>
</tbody>
</table>

Tulane affiliation (Check all that apply)

☐ Faculty Member  ☐ Vivarial Employee  ☐ Research Technician
☐ Staff (non-technical)  ☐ Undergraduate Student  ☐ Graduate Student

☐ Other (NOT Tulane student or employee) PLEASE EXPLAIN:

Check all that apply:

☐ Class A - I anticipate handling rodents and/or their tissues, body fluids, or wastes.
☐ Class B - I anticipate handling pigs, rabbits, dogs, cats, or ruminants (sheep, goats) and/or their tissues, body fluids, or wastes.
☐ Class C - I anticipate handling non-human primates and/or their tissues, body fluids, or wastes.
☐ Class D - I anticipate handling animals not previously discussed under the Classes A, B, C and/or tissues from animals experimentally infected with human pathogens.
   List species of animal:________________________________________________________________________
   List human pathogen:________________________________________________________________________

☐ I do not anticipate any contact with research animals and/or their tissues, body fluids or wastes.

I understand that if I have any occupational exposure or contact with the above listed animal(s), I may be at risk of developing some of the symptoms or conditions listed in the History section of the RAHF. I acknowledge that I have been given the opportunity to receive a medical examination.

Signature (required)  Date
I. **FINE ARTS SAFETY**

Two basic requirements for preventing illness or injury in art making areas are 1) recognition of the potential hazards of the materials being used, and 2) protective measures that limit exposure. The aesthetic value of art sometimes blinds us to the hazards inherent in art making activities, and yet many art materials may cause acute or chronic health effects, often without any warning signs. For example, neither epoxy resins nor glues for bonding plexiglass emit strong odors, yet both may cause liver damage and both are suspected carcinogens. Therefore, to ensure safe working conditions, faculty, staff, and students working with and around art materials must be made aware of 1) the hazards associated with art materials, 2) exposure risks if safety precautions are not exercised, 3) safety practices for working with art materials, and 4) personal protective equipment to limit exposure.
A. Training and Implementation of Safety Measures

The faculty member in charge of the studio or shop, is responsible for 1) training staff and students in the correct procedures for the safe handling of art making materials; 2) documenting training sessions; 3) determining the need for personal protective equipment; 4) developing and making readily available in the studio/shop site-specific procedures (procedures customized to conditions and materials being used in a given work area) that include procedures for emergency response; 5) notifying the Departmental Safety Representative and the Office of Environmental Health & Safety (OEHS) should any problems or concerns develop regarding ventilation in the area, personal protective equipment, disposal of hazardous waste, etc.; and 6) updating hazardous chemical inventories.

B. Compliance

Departmental Safety Representatives (DSR) help to ensure that the units they represent that include studio/shops involved in art making activities are in compliance with policies and procedures set forth in this manual, particularly those policies and procedures regarding hazard communication, hazardous materials safety, personal protective equipment, respiratory safety, and fire safety. (A unit is a department, section, center, or program or any number or configuration of these components.) DSRs also collect and submit to OEHS any training documentation, PPE assessments, chemical inventories, and other required documentation prepared by the faculty member in charge of the studio/shop.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University Operations Committee for consultation.

Unit’s should note that grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Medical Surveillance Program, Fire Safety, Radiation Safety, Hazardous Materials and Waste, and Biosafety.

C. Hazardous Materials

1. Never use any hazardous material without consulting the material safety data sheet (MSDS) for instructions on how to properly handle, store, and dispose of the material.

2. Label all containers clearly as to contents and associated hazards. MSDSs must be kept in the work area and made accessible to all employees. Copies may also be obtained from OEHS or on the OEHS website.

3. Written site-specific procedures for working with hazardous art materials and for performing dangerous processes within a given work area must be developed by the faculty member in charge of the studio/shop, reviewed with staff and students participating in art making.
activities, and be easily and prominently accessible in the work area. The site-specific procedures must include procedures for emergency response.

4. Do not dispose of a hazardous material by pouring the material into a sink or drain, or by placing it in regular solid waste containers. OEHS should be contacted for hazardous waste disposal and for any questions regarding procedures for handling hazardous waste materials.

5. Do not eat, drink, smoke, or apply cosmetics in areas with hazardous materials: doing so may result in the ingestion or inhalation of toxic materials. Furthermore, smoking can multiply the harmful effects of such materials on the lungs and, in some cases, convert the material into something more hazardous. REMINDER: Tulane has a campus wide "no smoking" policy that prohibits smoking in all but designated areas. (See, Section 26, Fire Safety, of this manual for University policy on smoking.)

6. Keep all solvent containers closed and store solvent drenched rags and towels properly to reduce exposure and contamination.

7. Special precautions must be taken when handling the following highly toxic art materials: arsenic oxide, asbestos, benzene (benzol), benzidine dyes, carbontetrachloride, chloroform, trichloroethylene, chromate pigment powder, phenol (carbolic acid), tetrachloroethane, and uranium oxide. Consult MSDSs and OEHS for more information on handling these and other highly toxic materials. (See, Section 12, Hazard Communication, and Section 29, Hazardous Materials Safety, of this manual.)

D. Personal Protective Equipment

1. An assessment of the work area must be conducted by the faculty member in charge of the studio/shop to determine the need for personal protective equipment (PPE). If it is determined that respiratory protection is required, personnel must receive a medical evaluation, be fit-tested, and trained in the use of the respirator. Proper work practices and engineering controls must also be implemented.

2. Appropriate clothing such as long-sleeved shirts, long pants, or protective smocks, boots, enclosed shoes, and gloves must be worn to protect the body from flying particles, chemical splashes, dust and radiation. Separation of work clothing from regular clothing is preferred.

3. Hearing protection (ear plugs or muffs) may be needed when working with equipment that produces high noise levels. Contact OEHS for an area evaluation.

4. Emergency showers and eyewash stations must be provided where injurious and corrosive materials are used. These units must be accessible, kept operable, and inspected regularly. Facilities Services shall inspect safety showers at least annually. Units shall inspect eye wash stations weekly. Inspections shall be conducted on a routine basis and documented. (See, Section 14, Personal Protective Equipment, and Section 15, Respiratory Protection, of this manual.)
E. Ventilation

1. Many art materials are labeled with a "use with adequate ventilation" warning. Opening a door or window is insufficient. In order to reduce air contaminants and prevent their spread to adjacent areas, the use of certain common art materials may need to be restricted. Spray paints, spray glues, spray fixatives, contact cements and rubber cements must not be used indoors unless approved local exhaust systems are available.

2. In areas such as printmaking, metal-smithing, and sand blasting, the faculty member in charge of the studio/shop must ensure that efficient local ventilation is maintained through proper maintenance and cleaning.

3. The faculty member in charge of the studio/shop and/or the DSR must contact OEHS to assist in the evaluation of ventilation problems or concerns.

F. Housekeeping

1. Follow instructions on the manufacturer's label in using cleaning materials.

2. In areas where accumulation of hazardous dust is possible, such as the ceramics-clay mixing room, sculpture's investment making area, and stained glass cleaning room, special consideration must be made for cleaning furniture and lighting fixtures. Wet cleaning methods or vacuum cleaning using specialized HEPA equipment may be required. Consult OEHS for assistance.

3. Practice good housekeeping: properly dispose of rags used to absorb chemicals, seal containers, properly store hazardous materials, make certain exits are not blocked, etc.

G. Fire Protection

1. Every shop or studio that stores or uses flammable or combustible materials must have an available fire extinguisher suited to the material used in the area:

   Class A - Fires involving wood, paper, textiles.
   Class B - Fires involving flammable and combustible liquids.
   Class C - Fires involving energized electrical equipment.
   Class D - Fires involving combustible metals (to be provided only if such materials are used in these areas. Class D extinguishers are metal specific.)

2. Smoking is not permitted in any area containing flammable or combustible liquids. Signage such as "No Smoking," "Open Flame," or "Spark Producing Electrical Equipment," shall be posted in areas containing flammable or combustible materials.

3. Towels or rags used with flammable or combustible solvents/paints must be placed in approved waste containers with self-closing lids and removed from the building daily.

4. Large quantities (55 gal) of waste solvents, such as turpentine or other paint thinners, shall not be purchased and/or used without the approval of OEHS. Contact OEHS for instructions on proper disposal of large quantities of waste solvents.
5. Flammable and combustible solvents and waste must be stored away from heat or ignition sources and from exits. Store quantities in excess of 10 gallons in safety cans or in "flammable liquid" storage cabinets.

6. Flammable or combustible liquid spills must be contained and cleaned immediately. For large spills, contact OEHS for assistance. (See Section 29, Hazardous Materials Safety, and Section 26, Fire Safety, of this manual.)

H. Studio Close-Out

Fine arts studios that are closing for relocation or remodeling should use the same close-out notification form and follow the same procedures as in Section 30, Laboratory Safety, IV, Laboratory Close-Out, of this manual.

End of Text — Return to Section 25, Page 1 Outline
Completion of this RAHF is mandatory for all Tulane University personnel (employees and students) who have contact or exposure to animals or animal tissues in conjunction with education or research. Completion of this RAHF by visitors is optional; however, as a minimum all visitors must complete a Declination form. The information provided will be considered confidential and will be treated accordingly. Please contact the Office of Environmental Health and Safety (OEHS) at 988-5486 if you have any questions.

**ALL INFORMATION MUST BE PROVIDED--DO NOT LEAVE BLANKS--PLEASE PRINT**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
<th>Email</th>
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<tbody>
<tr>
<td>Principal Investigator/Supervisor/Professor</td>
<td>Principal/Supervisor/Professor Phone</td>
<td>Principal/Supervisor/Professor Email</td>
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<tr>
<td>Campus</td>
<td>Department</td>
<td>Mail Code</td>
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**Tulane affiliation (Check all that apply)**

- [ ] Faculty Member
- [ ] Vivarial Employee
- [ ] Research Technician
- [ ] Staff (non-technical)
- [ ] Undergraduate Student
- [ ] Graduate Student

- [ ] Other (NOT Tulane student or employee) PLEASE EXPLAIN:

**Describe how your position involves contact or exposure to animals and/or their tissues, body fluids, or wastes:**

**Location of animal contact:**
- Campus:
- Building:
- Room/Area:

**DESIGNATIONS (Check all that apply by indicating CLASS, then FREQUENCY OF CONTACT. Mark only those classes applicable to those animals to be used)**

- **Class A**
  - I anticipate contact with rodents and/or their tissues, body fluids, or wastes.
  - Frequency of Contact: 1-3 times/day [ ] 1-3 times/week [ ] Less often [ ]

- **Class B**
  - I anticipate contact with pigs, rabbits, dogs, cats, ruminants (sheep, goats), ferrets, and/or their tissues, body fluids, or wastes.
  - Frequency of Contact: 1-3 times/day [ ] 1-3 times/week [ ] Less often [ ]

- **Class C**
  - I anticipate contact with non-human primates and/or their tissues, bodily fluids, or wastes.
  - Frequency of Contact: 1-3 times/day [ ] 1-3 times/week [ ] Less often [ ]

- **Class D**
  - I anticipate contact with animals not covered under Class A, B, or C, or animals and/or tissues from animals experimentally infected with human pathogens.
  - Frequency of Contact: 1-3 times/day [ ] 1-3 times/week [ ] Less often [ ]
  - List species of animal: ____________
  - List human pathogen: ____________

Because pathogens used experimentally cannot be anticipated in a general program description, specific health surveillance requirements will be formulated on a case by case basis.

**HISTORY**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Watery, burning, itchy eye(s)</td>
<td></td>
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<tr>
<td>Nasal dripping</td>
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<td>Sneezing</td>
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<td>Wheezing</td>
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<td>Shortness of breath</td>
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<td>Coughing</td>
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<td>Chest tightness</td>
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<td>Rash</td>
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<td>Hives</td>
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<td>Other/ Describe:</td>
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<table>
<thead>
<tr>
<th>Condition</th>
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<th>No</th>
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<td>Asthma</td>
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<td>Allergic rhinitis</td>
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<td>Allergic conjunctivitis</td>
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<tr>
<td>Hay fever</td>
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<tr>
<td>Animal allergy (any kind)</td>
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<td>Positive allergy skin test</td>
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<tr>
<td>Latex product allergy</td>
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<tr>
<td>Family history of asthma or allergy</td>
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<td></td>
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<tr>
<td>Heart valve disease or defect</td>
<td></td>
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<tr>
<td>Other/ Describe:</td>
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</table>

If you marked “yes” to any of the above symptoms or diagnosed conditions, are they made worse when handling the designated research animals or entering the animal research areas? Yes No DO NOT KNOW

Are you taking any medications that suppress your immune system, such as Prednisone or Azathioprine? YES NO
(If yes, please discuss animal work with your healthcare provider.)

26F-OEHS /Tulane RAHF (Rev. Jan 09) Animals
Fill out the form online, print, sign & date, and mail as directed.

**When were you last vaccinated or tested for the following?**

<table>
<thead>
<tr>
<th>Have you had the tetanus vaccine?</th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>If yes, month: _____ / year: ________</td>
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</table>

<table>
<thead>
<tr>
<th>Have you had the rabies vaccine?</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>If yes, month: _____ / year: ________</td>
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Titer date/result: ____________________________

**IMMUNIZATIONS AND SCREENINGS**

- Tetanus immunization is highly recommended for all individuals with animal contact. A booster shot is needed if it has been 10 or more years since the previous tetanus immunizations.

- The Hepatitis B vaccination is required to be offered to individuals who work with animals/animal tissues that are known to be genetically altered with human or non-human primate genes or tissues that are known to carry the hepatitis B virus (HBV). Refusal to accept the vaccine must be provided in writing.

- Semi-annual tuberculosis (TB) screening is required for individuals who handle non-human primates (Class C) or those who are working with animals or tissue infected with *Mycobacterium* species.

- Rabies immunization or proof of titer is recommended for individuals who work with dogs, cats, or ferrets. (Class B)

**ACKNOWLEDGMENT**

I have completed this Risk Assessment and History Form and have answered all questions truthfully and to the best of my recollection. I realize that contact with animals may result in exposure to various animal allergens. These allergens may cause allergic reactions despite the use of engineering and work practice controls and personal protective equipment.

__________________________  __________________________
Signature                          Date

**DISTRIBUTION:** Individuals/Departmental administrators are advised to keep a copy of this RAHF for their files

**PLEASE RETURN THE ORIGINAL COMPLETED FORM TO:**

**For personnel at TLUHSC- Downtown**
Pan Fattalnd
Office of Environmental Health and Safety
Tulane University
Campus Mail: OEHS - TW16
(504) 988-2800

**For personnel at TNPRC - Primate Center**
Occupational Health Nurse
Tulane National Primate Research Center
Campus Mail: SL 20
(504) 862-8040 ext. 6596
(985) 871-6596

**For personnel on the Uptown Campus**
Karen Douglas
Office of Environmental Health and Safety
Tulane University - Uptown Campus
Campus Mail: OEHS - Uptown
(504) 865-5307

**FOR OFFICE USE ONLY:**

<table>
<thead>
<tr>
<th>REVIEWED BY</th>
<th>DATE</th>
<th>FOLLOW UP NEEDED?</th>
<th>FOLLOW UP PERFORMED BY</th>
<th>DATE OF FOLLOW UP</th>
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26F-OEHS /Tulane RAHF (Rev. Jan 09) Animals
SECTION 26
FIRE SAFETY

SECTION CONTENTS
Addendum May 20, 2004

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A. Basic Preventive Measures
B. Emergency Action Plans
C. Detection/Suppression Equipment
D. Training
E. Compliance

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C. Containers for Flammable and Combustible Liquids
D. Pouring/Transferring of Liquids
E. Storage Cabinets
F. Inside Storage
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H. Extinguisher Requirements

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D. Residence Halls
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I. Fire Prevention

A. Basic Preventive Measures
B. Emergency Action Plans
C. Detection/Suppression Equipment
D. Training
E. Compliance

I. FIRE PREVENTION

Fire prevention is the most important facet of fire safety. Prevention requires 1) inspection of work areas for potentially hazardous conditions and/or practices such as improper storage or disposal of hazardous materials, poorly maintained equipment, improper use of office appliances such as coffee machines or microwave ovens, 2) correcting problems discovered during inspections, and 3) ensuring that all personnel follow basic safety practices.

- See Section 1, Emergency Response, of this manual for procedures to follow in the event of a fire, and for instructions in the use of fire extinguishers.

A. Basic Preventive Measures

1. Keep all designated exits (corridors, stairwells, hallways, foyers) clear of obstructions. Do not store any materials inside stairwells, mechanical equipment rooms, electrical closets, or telephone closets. Any item left in a corridor, stairwell, hallway, or foyer for more than 48 hours will be removed at the owner's expense.

2. Bicycles shall be parked in racks or at other approved locations exterior to buildings. Bicycles, motorcycles, or mopeds obstructing exits or entrance ways (including steps and handicapped access ramps) will be removed at the owner's expense.

3. Become familiar with the hazardous materials or hazardous situations in your area or location and related fire safety precautions, and help keep the area clean and free of excess combustible materials (e.g., empty cardboard boxes).

4. Do not obstruct or tamper with fire detection and suppression equipment. Maintain storage at least 18" below the plane of sprinkler head installations.

5. Turn off appliances such as coffee pots when not in use, and especially at the end of each work day. Do not place paper towels under coffee makers, toaster ovens, or microwave ovens.

6. The Office of Environmental Health & Safety (OEHS) holiday decoration policy is distributed to all departments in early October as a reminder of applicable safety precautions when decorating work areas for the holidays. (See Section 31, Office Safety, of this manual.)
7. **Containers**

   a) Small plastic containers are acceptable in areas or facilities with automatic sprinklers; however, metal trash receptacles are preferred. Contact OEHS for approval prior to purchase.  
   b) Containers located in hallways and exit corridors should be covered or equipped with a self-extinguishing lid assembly.  
   c) All trash containers in classrooms, laboratories, and offices that are 5 gallons or less in size need not to be equipped with covers.  
   d) **Underwriter’s Laboratories** (UL) or **Factory Mutual** (FM) listed special containers with self-closing lids are required for rags or paper towels coated with flammable or combustible liquids (e.g., oil, grease, solvents). Contact OEHS for approval prior to purchase.

8. **Smoking**

   a) In areas where smoking is permitted, use only metal or approved plastic ashtrays. Do not dispose of cigarettes in trash receptacles unless they are completely extinguished.  
   b) Do not smoke in areas where oxygen, flammable or combustible liquids, or gases are used or stored.  
   (See. **III. Smoking Policy**, at end of this section)

9. "Hot Work" permits that are required for welding, cutting, soldering or burning must be obtained prior to commencement of any such operation, and all applicable safety rules must be followed.  
   (See. **Section 24. Facilities Services**, of this manual for details regarding hot work permits and safety requirements.)

10. Follow lockout/tagout procedures outlined in **Section 24. Facilities Services**, of this manual to ensure that energy sources to equipment and machines are properly shut down.

B. **Emergency Action Plans**

   All employees should become familiar with the **Emergency Action Plan** for their unit which provides instructions for response and evacuation during an emergencies.  
   (See. **Section 1. Emergency Response**, of this manual for further information on Emergency Action Plans.  
   (A unit is a department, section, center, or program, or any number or configuration of these components.)

C. **Detection/Suppression Equipment**

1. **Installed Equipment**

   Fire detection and suppression equipment shall be installed in compliance with building code requirements and shall be maintained by Facilities Services.

2. **Portable Equipment**

   a. Fire extinguishers shall be conspicuously and accessibly located throughout all building areas, and must remain unobstructed. The accessibility of an extinguisher should not exceed a maximum travel distance of 75 feet for areas not using flammable or combustible liquids. For areas utilizing such liquids, the travel distance is reduced to 50 feet depending on the size of the extinguisher. Travel distance requirements are the same whether or not the building has automatic sprinklers.
b. Buildings must be equipped with the proper extinguisher type given occupant usage. Make certain that your area is equipped with the appropriate extinguisher:

- **Class A**: For wood, paper, cloth, and trash fires
- **Class B**: For paint, oil, grease, and flammable and combustible liquids
- **Class C**: For energized electrical fires
- **Class D**: For combustible metals, normally found in laboratories (metal specific)
- **Class K**: For fires in food service areas

c. Fire hoses located in the hallways and stairwells are intended for use by trained fire response personnel.

- *See Section 1, Emergency Response,* of this manual for instructions on using a fire extinguisher.

D. **Training**

Upon request, OEHS shall arrange for and conduct demonstrations and training sessions on the proper use of portable fire extinguishers and life safety procedures.

E. **Compliance**

1. **Role of Departmental Safety Representatives**

   Departmental Safety Representatives (DSRs) help to ensure that the units they represent are in compliance with fire codes and regulations and with applicable University policies and procedures regarding fire safety. DSRs also collect and submit to OEHS any required training documentation, inspection reports, or other required documentation prepared by unit supervisors/principal investigators.

   DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit’s non-compliance to the Unit Head.

   If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's **Environmental Health & Safety Operations Committee** for consultation.

2. **Compliance Requirements for Grant Proposal Certification**

   Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biosafety.
II. Flammable & Combustible Liquids

A. General

1. The issue, use, storage and disposal of flammable and combustible liquids are governed by rules and regulations promulgated by the Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA) fire codes, and University policy.

2. Work with flammable liquids must be performed in well-ventilated areas, preferably under a chemical fume hood, away from heat and ignition sources. Lab aprons or coats, eye protection, and gloves must be worn.

3. In areas where these liquids are stored, used and/or dispensed, NO SMOKING signs are to be posted in a conspicuous manner (e.g., on doors to labs, etc.).

4. Oily shop rags, paint rags, etc., must be stored in U.L. or F.M. listed metal containers with self-closing covers, and disposed of daily.

5. Flammable and combustible liquids must never be disposed of in the regular trash or through the sewer system drains.

6. Ordinary refrigerators, freezers, or cold rooms are not to be used for the storage or use of flammable and/or combustible liquids. Only Underwriter's Laboratories or Factory Mutual approved refrigerators or freezers must be utilized and marked as such. All others should be marked or labeled: NOT FOR STORAGE OF FLAMMABLE OR COMBUSTIBLE LIQUIDS

B. Classification of Flammable and Combustible Liquids

1. Flammable liquid refers to any liquid having a flash point below 100°F. Such flammables are designated as Class I liquids. These liquids are further subdivided into three classes. The following is an illustrative list of common flammable liquids:
Class IA flash point below 73°F, boiling point below 100°F: acetaldehyde, ethyl chloride, petroleum ether, collodion, methyl ethyl ether, propylene oxide, ethyl ether, pentane, gasoline.

Class IB flash point below 73°F, boiling point at or above 100°F: acetone, ethyl acetate, methyl alcohol, benzene, ethyl alcohol, methyl cyclohexane, butyl acetate, ethyl benzene, methyl ethyl ketone, butyl alcohol, ethylene dichloride, naphtha V.M. & P, carbon disulfide, propanol, cyclohexane, heptane, toluene, dioxane, hexane.

Class IC flash point at or above 73°F and below 100°F: amyl acetate, isopropanol, turpentine, amyl alcohol, methyl alcohol, xylene, dibutyl ether, styrene.

2. **Combustible liquid** refers to any liquid having a flash point at or above 100°F. Combustible liquids are subdivided as follows:

   Class II flash point at or above 100°F: acetic acid, diesel fuel, methyl amyl acetate, camphor oil, fuel oil no. 5, methyl lactate, fuel oil no. 6, mineral spirits, ethyl lactate, hydrazine, Stoddard solvent, kerosene, Varsol.

   Class III flash point at or above 140°F and below 200°F: aniline, furfuryl alcohol, phenol, carboxylic acid, naphthalenes, pine oil, creosote oil, nitrobenzoyl, "Tetralin," fufural.

3. **Ethyl Ether and Other Peroxide Forming Chemicals**
   a. Ether is an extremely volatile liquid that requires special consideration in handling, storage and use. It deteriorates with age and may become an explosive.
   b. Cans of ether must be dated when opened. After 6 months, the unused ether shall be properly disposed of in coordination with OEHS. Never discard waste ether into the plumbing system.
   c. In order to avoid the accumulation of "old ether," it must be purchased in minimal quantities that will be readily used within a six month period.
   d. Ether must be stored in an approved flammable liquid or explosion proof storage refrigerator, in a ventilated storage area, or in a flammable liquid storage cabinet.
   e. Keep ether away from heat and ignition sources and use in a chemical fume hood.

C. **Containers for Flammable and Combustible Liquids**

Containers for flammable and combustible liquids shall be of types not exceeding the maximum capacities as set forth in OSHA standards. These size limitations, outlined in Table 1 of this section, must be followed in order to prevent ignition of flammable liquids by sparks from static discharge during pouring operations. **(See Section 30, Laboratory Safety, III.F., Classification, Handling & Storage of Chemicals, of this manual.)**

D. **Pouring and Transferring of Liquids**

1. To avoid sparks from the discharge of static electricity during pouring operations of Class I (flammable) liquids, the metal storage containers and the metal container being filled must be electrically bonded and grounded. Bonding is the provision of an electrical path between
the storage container and the container being filled. Grounding is provided by an electrical path from the storage container to an earth ground.

2. In rooms where dispensing of Class I liquids is permitted, electrical systems and operations must comply with NFPA fire codes and OSHA rules and regulations.

3. In a laboratory work area, transferring of Class I liquids from bulk stock containers to smaller containers shall be performed a) in a laboratory hood; or b) in an area provided with ventilation adequate to prevent accumulation of flammable vapors/air mixtures exceeding 25 percent of the lower flammable limit; or c) in a separate inside storage area (NFPA 30).

4. Transfers of Class I liquids from containers of 5 gallons or more shall be carried out in: a) a separate area outside the building; or b) a separate inside area meeting NFPA 30 requirements.

### TABLE 1
**MAXIMUM ALLOWABLE SIZE OF CONTAINERS & PORTABLE TANKS**

<table>
<thead>
<tr>
<th>CONTAINER TYPE</th>
<th>FLAMMABLE LIQUIDS</th>
<th>COMBUSTIBLE LIQUIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class IA</td>
<td>Class IB</td>
</tr>
<tr>
<td>Glass</td>
<td>1 pt(^1)</td>
<td>1 qt(^1)</td>
</tr>
<tr>
<td>Metal (other than DOT drums) or Approved Plastic(^2)</td>
<td>1 gal</td>
<td>5 gal</td>
</tr>
<tr>
<td>Safety Cans(^3)</td>
<td>2 gal</td>
<td>2 gal</td>
</tr>
<tr>
<td>Metal Drum (DOT Spec.)</td>
<td>60 gal(^4)</td>
<td>60 gal(^4)</td>
</tr>
<tr>
<td>Approved Portable Tanks</td>
<td>660 gal</td>
<td>660 gal</td>
</tr>
<tr>
<td>Polyethylene DOT Spec. 34, or as authorized by DOT Exemption</td>
<td>1 gal</td>
<td>5 gal</td>
</tr>
</tbody>
</table>

SI Units: 1 pt = 0.473 L  1 qt = 0.95 L  1 gal = 3.8 L\(^1\)

---

\(^1\) Glass containers of not more than one gallon capacity may be used if the required liquid purity (such as ACS analytical reagent grade or higher) would be affected by storage in metal containers, or approved plastic containers, or if the liquid would cause excessive corrosion of the metal container.

\(^2\) Approved means approved or listed by either Underwriter’s Laboratories (UL) or Factory Mutual Engineering Corp. (FM). 5 gallon containers must be kept inside flammable liquid storage rooms.

\(^3\) In instructional laboratory work areas, no containers for Class I or II liquids shall exceed a capacity of one gallon except that safety cans may be of two gallon capacity. Drums of not more than 60 gallons are permitted in a separate area inside the building if it meets NFPA 30 requirements.

\(^4\) Not allowed for laboratories except that drums of not more than 60 gallons are permitted in a separate area inside the building if the inside area meets of NFPA 30 requirements.

\(^5\) This is five gallons for laboratories except as noted in Footnote 3 above.
E. Storage Cabinets

1. Storage cabinets for flammable and combustible liquids must be UL or FM approved. Cabinet doors must also be self-closing.

2. Not more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids may be stored in a storage cabinet (OSHA). Not more than 3 such cabinets may be located in a single fire area except in industrial occupancies where separation greater than 100 feet can be achieved.

3. A cabinet need not be vented for fire protection purposes; however, if vented, it must comply with NFPA 30. If not vented, the vent opening must be sealed with a properly fitted metal bung.

4. Storage cabinets shall be labeled with conspicuous caution signs: FLAMMABLE--KEEP FIRE AWAY. NO SMOKING signs shall be prominently posted in rooms and on entrance doors.

5. Liquids for building maintenance, painting or other infrequent maintenance purposes may be stored temporarily in closed containers outside of flammable liquid storage cabinets or separate inside storage areas in quantities not to exceed a 10 day supply of anticipated rates of consumption. Assembly Occupancy: Not more than 10 gallons of Class I and II liquids combined or 60 gallons of Class III liquids unless stored in storage cabinets, safety cans, or inside storage rooms.

6. Dip tanks, paint storage, etc., must follow the storage practices outlined in the appropriate OSHA or NFPA standards.

7. Office, Educational, and Institutional Occupancies:
   
   a. For operation of office equipment, maintenance, demonstration and laboratory work, storage shall be limited to:

   1) Containers of 1 gallon size outside of a separate inside storage area, except that safety cans can be of 2 gallon capacity.

   2) Not more than 10 gallons of Class I and II liquids combined shall be stored in a single fire area outside of a storage cabinet or a separate inside storage area unless in safety cans.

   3) Not more than 25 gallons of Class I and II liquids combined shall be stored in a single fire area in safety cans outside of a separate inside storage area or storage cabinet.

   4) Not more than 60 gallons of Class IIIA liquids shall be stored outside of a separate inside storage area or cabinet.

   b. Storage within laboratories using chemicals shall be kept to the minimum necessary for the work being done but cannot exceed the amounts listed in Table 2 of this section.
F. **Inside Storage**

Inside storage rooms, constructed in strict accordance with OSHA and NFPA requirements, may be used for storage of larger quantities of flammable and combustible liquids.

G. **Outside Storage**

Storage of flammables and combustible liquids outside of buildings shall be strictly in accordance with OSHA and NFPA requirements as to capacity, location, construction, spill containment, security fire control, etc.

H. **Extinguisher Requirements**

At least one portable fire extinguisher having a rating of not less than 20BC, but preferably 2A 20BC, shall be located in each space where flammable or combustible liquids are stored or used. *(See, Section 1, Emergency Response, III.B.3, Using a Fire Extinguisher, of this manual.)*

---

**TABLE 2**

**MAXIMUM QUANTITIES OF FLAMMABLE AND COMBUSTIBLE LIQUIDS IN LABORATORY UNITS OUTSIDE OF FLAMMABLE LIQUID STORAGE ROOMS**

<table>
<thead>
<tr>
<th>Laboratory Unit Class</th>
<th>Flammable or Combustible Liquid Class</th>
<th><strong>Excluding Quantities in Storage Cabinets(^1) and Safety Cans</strong></th>
<th><strong>Including Quantities in Storage Cabinets(^2) and Safety Cans</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maximum Quantity(^3) Per 100 Square Feet of Laboratory Unit</td>
<td>Maximum Quantity(^4) Per Laboratory Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>w/o Sprinkler</td>
<td>Sprinkler(^5)</td>
</tr>
<tr>
<td>A(^6) (High Hazard)</td>
<td>I, I, II and III(^7)</td>
<td>10 Gallons</td>
<td>300 Gallons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 Gallons</td>
<td>400 Gallons</td>
</tr>
<tr>
<td>B(^6) (Intermediate Hazard)</td>
<td>I, I, II and III(^7)</td>
<td>5 Gallons</td>
<td>150 Gallons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 Gallons</td>
<td>200 Gallons</td>
</tr>
<tr>
<td>C(^6) (Low Hazard)</td>
<td>I, I, II and III(^7)</td>
<td>2 Gallons</td>
<td>75 Gallons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Gallons</td>
<td>100 Gallons</td>
</tr>
</tbody>
</table>

For SI Units: 1 gal = 3.785 L; 100 sq ft = 9.3 m\(^2\)

\(^1\) Class A Laboratory units shall not be used as instructional laboratory units.

\(^2\) Maximum quantities of flammable and combustible liquids in Class B and Class C instructional laboratory units shall be 50% of those listed in the Table.

\(^3\) For maximum container sizes.

\(^4\) Regardless of the maximum allowable quantity, the maximum amount in a laboratory unit shall never exceed an amount calculated by using the maximum quantity per 100 square feet of laboratory unit. The area of offices, lavatories, and other contiguous areas of a laboratory unit are to be included when making this calculation.

\(^5\) The maximum quantities of Class I liquids shall not exceed the quantities specified for Class I liquids alone.

\(^6\) Where water may create a serious fire or personnel hazard, a nonwater extinguishing system may be used instead of sprinklers, or the combustible metals must be stored properly or separately stored to prevent contact with water.

\(^7\) See description of Flammable Liquid Storage Room in Section 4-4 of NFPA 30, *Flammable and Combustible Liquids Code*. See description of Storage Cabinet in Section 4-2 of NFPA 30.
III. SMOKING POLICY

The following smoking policy was developed to decrease the exposure of faculty, staff, and students to unwanted second-hand tobacco smoke.

A. All Tulane facilities must comply with this policy unless a different policy has been authorized within an individual school or department.

B. Smoking is prohibited in all Tulane buildings except in designated smoking-permitted areas.

C. Private Offices

Smoking is not permitted in private offices unless the room has an individual heating/ventilation/air-conditioning system (HVAC) that exhausts directly to the outside. In the event that all persons whose offices share the same HVAC unit agree to allow smoking in their “system,” all of their offices could be designated as smoking permitted.

D. Residence Halls

1. Students’ rooms should be considered the same as private/individual offices (III.C. above), with the difference that smoking could be permitted in a dormitory room if all of the residents served by the same HVAC system agree to live in a smoking-permitted environment and the area is so designated by signage.

2. Smoking regulations in residence halls shall continue to be the responsibility of the Vice-President for Student Affairs and other residential-life officers.

3. Smoking is prohibited in public spaces in the residence halls (hallways, bathrooms, lounges, etc.).

E. Smoking-Permitted Lounges and Other Public Rooms

Smoking permitted lounges and other public rooms anywhere on campus shall only be so designated if they have their own externally-exhausted HVAC unit. This would preclude smoking areas in dining rooms, except for enclosed sections with their own externally-exhausted HVAC’s.

F. Pocket Parks have an area designated as smoking-permitted.

End of Text – Return to Section 26, Page 1 Outline
DECLINATION FORM FOR HEPATITIS B VACCINE

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccine at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

I am declining the hepatitis B vaccine for the following reason:

___ I have already completed the hepatitis B vaccine series. I have been informed that I may request a titer test at no charge to me to confirm that I have sufficient antibody to hepatitis B.

___ I am declining due to medical or other personal reasons. I have been informed that I can choose to receive the hepatitis B vaccination series at no charge at a later time if I continue to work in an at-risk position.

__________________________________________
Printed Name

__________________________________________
Signature

__________________________________________
Date
SECTION CONTENTS

I. Food Services Safety (p. 1)
   A. General Guidelines (p. 2)
      1. Dishware/Utensils
      2. Kitchen Equipment
      3. Fixtures 4. Equipment Handling/Cleaning
      5. Personal Protective Equipment
   B. Sanitation (p. 3)
      1. Hygiene
      2. Food Protection
         and Storage
      3. Housekeeping
      4. Pest Control
   C. Compliance (p. 5)

ADDITIONAL READING

Basic Safety Practices
Emergency Response
Hazardous Materials Safety
Personal Protective Equipment
Pest Control

FORMS REFERENCED

First Report of Occupational Injury/Illness 18F-OEHS

I. FOOD SERVICES SAFETY

Maintaining a good standard of hygiene in the preparation and handling of food services following good housekeeping and storage practices, and ensuring that employees are properly trained in sanitation practices for handling and serving food are critical to food services safety.

To avoid foodborne illness outbreaks, all food service workers are required to adhere to practices outlined in the Sanitary Code of the State of Louisiana, particularly the Hazard Analysis Critical Control Points method of food sanitation. Each food service operation must have at least one person who

Food Services / Page 12 / SECTION
has been certified under the Food Safety Certification Program in accordance with the requirements of the Louisiana State Legislature. The certification must be renewed every five years.

A. **General Guidelines**

1. **Dishware/Utensils**
   
   a. All chipped or cracked dishware must be discarded.
   
   b. Handles of cooking utensils must not extend beyond the edge of ranges or tables.
   
   c. Return all knives, saws, and cleavers to their proper racks.
   
   d. Do not store heavier utensils or high stacks of dishes on high shelves.
   
   e. Disposable single service cups and utensils must be kept in their original dispensing containers. Eating utensils shall be displayed “handle up” for self-service availability.
   
   f. Use dry cloths, mitts or potholders to move hot receptacles.

2. **Kitchen Equipment**

   a. Keep oven doors closed when oven is not in use.
   
   b. Use caution in lighting ovens on gas stoves. Light pilot before turning on burners. Never face oven; stand to one side.
   
   c. Walk-in refrigerator lights shall be turned on in the morning and may be turned off only when leaving at night.
   
   d. Exhaust hoods, vents, and fixtures must be cleaned regularly. Duct work must be periodically (at least annually) cleaned, inspected, and treated if necessary.
   
   e. Do not remove guards from kitchen equipment.
   
   f. Fire suppression systems for cooking equipment shall be inspected every six months by a licensed fire protection systems specialist.

3. **Fixtures**

   a. Light bulbs must be enclosed in a light fixture.
   
   b. Ground Fault Circuit Interruptor systems must be provided for electrical outlets in wet areas.

4. **Equipment Handling/Cleaning**

   a. Never place hands or fingers inside a garbage disposal.
   
   b. Shut off switch and remove plug from receptacle before cleaning electrical appliances such as meat slicers.

Food Services / Page 2 / SECTION 27
c. When removing a cover from a pot or pan, raise the lid in a manner that will direct the steam away from you. Assume all pots, pans, stoves, steam kettles, coffee urns, and pipes are hot before attempting to touch them.

d. Do not use steel wool or any other cleaning material that may contaminate food.

e. Before cleaning steam tables, dish warmers, dishwashers, etc., make certain that steam has been shut off and equipment is cool enough to handle.

f. Always push, do not pull, swivel-wheel carts. Load carts carefully to avoid spilling.

5. **Personal Protective Equipment**

   a. Wear shoes with good traction.

   b. Wear gloves when handling fruit or produce crates.

   c. Food services employees must wear safety goggles when there is a possibility of injury from caustic materials, flying particles, hot fat splatters and other associated hazards. Safety glasses may be used for protection against flying particles. *(See Section 14, Personal Protective Equipment, of this manual.)*

B. **Sanitation**

1. **Hygiene**

   a. **Wash your hands** before handling food, dishware or utensils. Wash back of hands, between fingers, and exposed area of your arms for 15-20 seconds.

   b. **Wash your hands** before starting work and after returning from a break or from using the restrooms.

   c. **Wash your hands** after handling trash or garbage.

   d. Maintain a standard of personal cleanliness in body and dress.

   e. Foodborne illnesses may require medical evaluation and clearance. Report all illnesses to your supervisor. Any person with an infection or illness must not be allowed to work in areas where he/she would come in contact with food or with food contact surfaces or equipment. This status shall remain in effect until cleared by a physician. The **Office of Environmental Health & Safety** (OEHS) must be contacted immediately in cases of suspected food poisoning.

   f. Injured or ill employees must seek immediate medical attention at the Occupational Medicine Clinic or the Emergency Room at Tulane University Hospital and Clinic, or a medical facility of the employee’s choice. Injured/ill employees must present a **First Report of Injury Illness form** *(Form 18F-OEHS located in Appendix E of this manual)* at the time of medical treatment, and must submit the form within 24 hours to the **Office of Risk Management** (original) and OEHS (copy).

   g. Do not cough, spit, or sneeze near food, dishes, or food contact surfaces.
h. Handle food items and clean utensils appropriately.

2. **Food Protection and Storage**
   
   a. Use clean, wholesome foods that are free of spoilage.
   
   b. Defrost frozen foods under cool running water, in a microwave oven, or by directly cooking the items.
   
   c. Certain foods and/or cooking methods require periods of sustained internal temperatures to ensure food safety. Employees who are responsible for cooking, reheating, storing, and/or maintaining food temperatures on serving lines should refer to those sections of the Sanitary Code that deal specifically and in detail with food temperatures for cooking, reheating, serving, and storing.
   
   d. Keep all food containers covered. Leftovers must be dated.
   
   e. Hazardous chemicals must **not** be stored near food and dishware/utensils.
   
   f. Properly store glassware and other articles to prevent them from falling into food.
   
   g. Store all food/beverages in a clean, dry place at least six inches off the floor. Discard or return dented, swollen and puffed cans of food to the distributor.
   
   h. Do not store raw food above cooked or processed food.

3. **Housekeeping**
   
   a. Keep food preparation, storage, and serving areas clean. Poor housekeeping causes accidents and can cause foodborne illnesses.
   
   b. All multi-use dishware, utensils, pots and pans must be washed, rinsed, and sanitized either in a three-compartment sink or in an automatic dishwasher and air-dried after sanitation; do not use a drying cloth. The proper methods for washing, rinsing, and sanitizing, including proper temperatures, must be followed as required by the Sanitary Code.
   
   c. Wipe spilled liquids immediately; pick up potato peelings, lettuce, cooking utensils, or any item that has fallen to the floor.

4. **Pest Control**

   Maintain good pest control in all areas of the food service facility. (See *Natural Pest Control Measures* in Section 32, Pest Control, of this manual.)
C. Compliance

Departmental Safety Representatives (DSR) help to ensure that the units they represent that handle food services are in compliance with the Sanitary Code and with other relevant policies set forth in this manual. (A unit is a department, section, center, or program or any number or configuration of these components.) DSRs also collect and submit to OEHS required documentation such as inspection reports, training documentation, and any other required documentation prepared by unit supervisors.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit’s non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and, if necessary, take the issue of the non-compliant unit to the University’s Environmental Health & Safety Operations Committee for resolution. Food service areas are subject to on-the-spot inspections that could draw heavy fines for Sanitary Code violations. The cost of any such fines shall be borne by the unit responsible for the food service area. (See Section 2, Environmental Health & Safety, of this manual for information on the University’s Compliance Management System.)

End of Text — Return to Section 27, Page 1 Outline
**Blood and Body Fluid Exposure Report**

<table>
<thead>
<tr>
<th>Last Name: __________________________</th>
<th>First Name: ________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposure ID:</strong> (for office use only)</td>
<td>0 B 0 0 0</td>
</tr>
<tr>
<td><strong>Facility ID:</strong> (for office use only)</td>
<td>0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

1) **Date of Exposure:** [ ] [ ] [ ] [ ]

2) **Time of Exposure:** [ ] [ ]

3) **Department where Incident Occurred:**

4) **Home Department:**

5) **What is the Job Category of the Injured Worker?**

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>1</td>
</tr>
<tr>
<td>Nurse</td>
<td>4</td>
</tr>
<tr>
<td>CNA/HHA</td>
<td>18</td>
</tr>
<tr>
<td>Respiratory Therapist</td>
<td>6</td>
</tr>
<tr>
<td>Surgery Attendant</td>
<td>7</td>
</tr>
<tr>
<td>Other Attendant</td>
<td>8</td>
</tr>
<tr>
<td>Phlebotomist/Venipuncture/IV Team</td>
<td>9</td>
</tr>
</tbody>
</table>

6) **Where Did the Exposure Occur?**

<table>
<thead>
<tr>
<th>Location</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Room</td>
<td>1</td>
</tr>
<tr>
<td>Outside Patient Room</td>
<td>2</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>3</td>
</tr>
<tr>
<td>Intensive/Critical Care unit</td>
<td>4</td>
</tr>
<tr>
<td>Operating Room/Recovery</td>
<td>5</td>
</tr>
<tr>
<td>Outpatient Clinic/Office</td>
<td>6</td>
</tr>
<tr>
<td>Blood Bank</td>
<td>7</td>
</tr>
<tr>
<td>Venipuncture Center</td>
<td>8</td>
</tr>
</tbody>
</table>

7) **Was the Source Patient Identifiable?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

8) **Which Body Fluids were Involved in the Exposure?**

<table>
<thead>
<tr>
<th>Body Fluid</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood or Blood Products</td>
<td>5</td>
</tr>
<tr>
<td>Vomit</td>
<td>6</td>
</tr>
<tr>
<td>Sputum</td>
<td>7</td>
</tr>
<tr>
<td>Saliva</td>
<td>8</td>
</tr>
<tr>
<td>CSF</td>
<td>9</td>
</tr>
</tbody>
</table>

   **Was the body fluid visibly contaminated with blood?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

9) **Was the Exposed Part?**

<table>
<thead>
<tr>
<th>Exposed Part</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intact Skin</td>
<td>10</td>
</tr>
<tr>
<td>Non-Intact Skin</td>
<td>11</td>
</tr>
<tr>
<td>Eyes</td>
<td>12</td>
</tr>
</tbody>
</table>

10) **Did the Blood or Body Fluid?**

    | Blood or Body Fluid | Code |
    |---------------------|------|
    | Touch Unprotected Skin | 13 |
    | Touch Skin between Gap in Protective Garments | 14 |

11) **Which Barrier Garments were Worn at the Time of Exposure?**

    | Garment | Code |
    |---------|------|
    | Single Pair Latex/Vinyl Gloves | 15 |
    | Double pair Latex/Vinyl Gloves | 16 |
    | Goggles | 17 |
    | Eyeglasses (not a protective item) | 18 |
    | Eyeglasses with Side shields | 19 |
    | Face shield | 20 |

12) **Was the Exposure the Result of?**

    | Exposure Result | Code |
    |-----------------|------|
    | Direct Patient Contact | 1 |
    | Specimen Container Leaked/Spilled | 2 |
    | Blood Services | 3 |
    | Feeding/Ventilator/other Tube Separated/Leaked/Splashed. | 4 |
    | Other Body Fluid Container Spilled/Leaked | 5 |
    | Touched Contaminated Equipment/Surface | 6 |
    | Touched Contaminated Drapes/Sheets/Gowns | 7 |
    | Unknown | 8 |
    | Other, Describe: | 9 |
If Equipment Failure, Please Specify: ________________________________

Equipment Type: ________________________________

Manufacturer: ________________________________

13) For How Long Was the Blood or Body Fluid In Contact with Your Skin or Mucous Membranes? (check one)
1. Less than 5 Minutes
2. 5-14 Minutes
3. 15 Minutes to 1 Hour
4. More than 1 Hour

14) How Much Blood/Body Fluid Came in Contact with Your Skin or Mucous Membranes? (check one)
1. Small Amount (up to 5 cc, or up to 1 teaspoon)
2. Moderate Amount (up to 50 cc, or up to quarter cup)
3. Large Amount (More than 50 cc)

15) Location of the Exposure:

Write the number of the location of up to three exposed body parts in the blanks below.

- Largest area of exposure: ______
- Middle area of exposure: ______
- Smallest area of exposure: ______

16) Describe the Circumstances Leading to this Exposure (please note if a device malfunction was involved):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

17) For Injured Worker: Do you have an Opinion that any other Engineering Control, Administrative or Work Practice could have prevented the Injury?

<table>
<thead>
<tr>
<th>Describe:</th>
<th>1 Yes</th>
<th>2 No</th>
<th>3 Unknown</th>
</tr>
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<tr>
<td></td>
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</tbody>
</table>

Cost:

- Lab charges (Hb, HCV, HIV, other tests)
- Healthcare Worker Source
- Treatment Prophylaxis (HBIG, Hb vaccine, tetanus, other)
- Healthcare Worker Source
- Service Charges (Emergency Dept, Employee Health, other)
- Other Costs (Worker's Comp, surgery, other)
- TOTAL (round to nearest dollar)

Is this Incident OSHA reportable?

<table>
<thead>
<tr>
<th>If Yes, Days Away from Work?</th>
<th>1 Yes</th>
<th>2 No</th>
<th>3 Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days of Restricted Work Activity?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Does this incident meet the FDA medical device reporting criteria? (Yes if a device defect caused serious injury necessitating medical or surgical intervention, or death occurred within 10 works days of incident.)

<table>
<thead>
<tr>
<th>1 Yes (If Yes, follow FDA reporting protocol)</th>
<th>2 No</th>
</tr>
</thead>
</table>
SECTION 28
FORMALDEHYDE POLICY

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EmployeeSafetyTraining Section3
EnvironmentalHealth&Safety Section2
HazardCommunication Section12
HazardousMaterialsSafety Section29
LaboratorySafety Section30
PersonalProtectiveEquipment Section14
I. **FORMALDEHYDE POLICY**

Formaldehyde is a colorless, poly merizable gas with a pungent odor that is used, for example, in laboratories for preserving and fixing tissues. As an irritant, formaldehyde may cause allergic symptoms and adverse health effects at very low levels. Formaldehyde is also considered a carcinogen.

Because of its hazardous characteristics, formaldehyde requires specialized handling, use, storing, monitoring, labeling, and disposal methods. In an effort to protect workers from the adverse effects associated with formaldehyde exposure, the **Occupational Safety and Health Administration** (OSHA) has developed a Formaldehyde Standard requiring employers to provide a specific written policy for employees who are using formaldehyde or who may be potentially exposed to formaldehyde. In fulfillment of this requirement, the **Office of Environmental Health & Safety** (OEHS) presents the written **Formaldehyde Policy** set forth in this section of the **Environmental Health & Safety Polices and Procedures Manual** thereby making it available to all employees, their designated representatives and any other parties, including contractors, wishing to review it.

As part of this manual, the Formaldehyde Policy is widely distributed to departments throughout the University, and is available on the OEHS website at [www.som.tulane.edu/oehs](http://www.som.tulane.edu/oehs). Copies may also be obtained by contacting OEHS in writing.

A. **Contents of the Formaldehyde Policy**

The Formaldehyde Policy contains details of the formaldehyde labeling policy, the Material Safety Data Sheet (MSDS) policy, exposure monitoring, medical surveillance, medical removal, permissible exposure limits (PEL), respiratory protection, protective clothing and its maintenance, emergency situations, and employee information and training. The Formaldehyde Policy supplements the Hazard Communication Policy (see **Section 12. Hazard Communication**), the Chemical Hygiene Plan (see **Section 30. Laboratory Safety**), policy on respiratory protection (see **Section 15. Respiratory Protection**), personal protective equipment (see **Section 14. Personal Protective Equipment**), and training (see **Section 3. Employee Safety Training**).
B. Policy Scope

The Formaldehyde Policy applies to all occupational exposures to formaldehyde, \textit{i.e.}, formaldehyde gas, its solutions (formalin, etc.), and materials that release formaldehyde.

C. Responsibility for Implementation

1. Initial training of supervisory level employees, survey distribution and risk determination, and monitoring shall be provided by OEHS.

2. Supervisors/principal investigators are responsible for communicating the Formaldehyde Policy to all subordinate employees who are determined by OEHS (via monitoring and surveys) to be at risk for occupational exposure to formaldehyde.

3. Supervisors/principal investigators shall be required to complete a \textbf{Formaldehyde Survey} form (\texttt{Form 01F-OEHS} in Appendix E of this manual) and employee training documentation for at risk employees under their supervision. The survey and training documentation shall be collected by the unit's Departmental Safety Representative and submitted to OEHS for review. (A \textit{unit} is a department, section, center, or program, or any number or configuration of these components.)

4. Because the cost of medical surveillance shall be a necessary expense to the laboratory/unit, sufficient unit funds must be provided for this purpose. The expense of any prescribed personal protective equipment (PPE) and/or engineering controls must also be funded through departmental budgets, grants, etc.

5. Success in implementing the Formaldehyde Policy depends on the cooperation of employees who have been identified (through surveys and monitoring) and notified by OEHS as being at risk for formaldehyde exposure. Employees shall be on the alert for potential hazards of all materials in their work area, especially formaldehyde, by consulting MSDSs. Employees shall also follow appropriate work practices established to protect them from formaldehyde-related illnesses and injuries.

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The \textbf{Office of Environmental Health & Safety} shall assist supervisors/principal investigators in establishing regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or STEL. \textit{See IV. Regulated Areas, further in the section}. Entrances and access ways to these regulated areas must be posted with signs bearing the following information (signs can be obtained from the):

\textbf{DANGER - FORMALDEHYDE}

\textbf{IRRITANT AND POTENTIAL CANCER HAZARD AUTHORIZED PERSONNEL ONLY}
II. Compliance

A. Role of Departmental Safety Representatives

Departmental Safety Representatives (DSR) help to ensure that the units they represent are in compliance with regulatory standards and with the Tulane University Formaldehyde Policy set forth in this section. DSRs also collect and submit to OEHS all training documentation, formaldehyde surveys, monitoring, and other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee for consultation.

- See Section 2 Environmental Health & Safety, of this manual for information on the Compliance Management System.

B. Compliance Requirements for Grant Proposal Certification

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biosafety.
III. Exposure Limits and Monitoring

A. Permissible Exposure Limits

In the event of an emergency where permissible exposure limits (PELs) may be exceeded, the area shall be evacuated and OEHS shall be immediately contacted to implement monitoring and procedures to reduce exposure to employees, students, and spill cleanup personnel. Respirators as well as engineering controls shall be implemented by trained personnel until exposures are within the acceptable range and clearance is given by OEHS. The following are OSHA permissible exposure limits:

1. **Time Weighted Average** (TWA): No employee shall be exposed to airborne concentrations of formaldehyde that exceed 0.75 parts per million (ppm) of formaldehyde as an 8 hour TWA.

2. **Short Term Exposure Limit** (STEL): No employee shall be exposed to an airborne concentration of formaldehyde that exceeds 2 parts per million (ppm) of formaldehyde as a 15 minute STEL.

3. **Action Level**: No employee shall be exposed at or above the action level of 0.5 ppm over an 8 hour TWA without action being taken to determine and reduce exposure levels.

B. Exposure Monitoring

1. Each unit, laboratory, or work area designated by OEHS (via survey) to present a possible formaldehyde exposure risk, shall be screened to determine if actual exposure of personnel in these areas needs to be monitored. The criteria OEHS shall use to determine who will be monitored is based upon the state or form of the formaldehyde, quantity, concentration, duration and frequency of exposure, and the availability of engineering controls.

2. For areas in which there is documented and objective data that formaldehyde cannot normally result in concentrations at or above the action level (0.5 ppm over an 8 hour TWA) or the STEL (2.0 ppm over a 15 minute period) under foreseeable conditions of use, or in worst case scenarios, the measuring of employee exposure shall not be required.

3. When an employee's exposure is determined from representative sampling, the measurements used shall be representative of the employee's full shift or short term exposure to formaldehyde.
(There are two types of monitoring: full shift and short term exposure monitoring. Short term entails 15 minutes of the worst-case exposure (when concentrations of formaldehyde are heaviest). Full shift entails eight hour monitoring or whatever time constitutes a full shift.)

4. Representative samples of worst case scenarios for job classifications in the work area shall be taken for each shift unless OEHS determines, with documented objective data, that exposure levels for a given job classification are equivalent for different work shifts.

C. Initial Monitoring

1. OEHS shall initially conduct surveys of all laboratory and/or work area personnel to identify employees who may be exposed at or above the action level (0.5 ppm over 8 hour TWA) or at or above the STEL (2.0 ppm over a 15 minute period) and accurately determine the exposure of each employee so identified.

2. OEHS shall develop a representative sampling strategy and measure significant exposures within each job classification for each work shift to correctly characterize and not underestimate the exposure of any employee within each exposure group.

3. Monitoring shall be repeated each time an area at risk for exposure to formaldehyde changes production, equipment, process, laboratory standard operating procedures, personnel or control measures that may result in new or additional formaldehyde exposure(s).

4. Upon receipt of reports of signs or symptoms of respiratory or dermal conditions associated with formaldehyde exposure, OEHS shall promptly monitor the affected employee's exposure.

D. Periodic Monitoring

1. Employees shall be monitored periodically and their exposure to formaldehyde accurately determined if initial monitorings show that exposure is at or above the action level or at or above the STEL.

2. If the last monitoring reveals employee exposure at or above the action level, OEHS shall repeat monitoring at least every 6 months.

3. If the last monitoring reveals employee exposure at or above the STEL, OEHS shall repeat monitoring at least once a year under the worst conditions.

E. Discontinuation of Monitoring

OEHS may discontinue periodic monitoring if results from two consecutive sampling periods, taken at least 7 days apart, show that employee exposure is below the action level and the STEL. These results shall be statistically representative and consistent with OEHS and the supervisor/principal investigator’s knowledge of the job and work operation.

F. Accuracy of Monitoring

Monitoring shall be accurate, at the 95% confidence level, to within plus or minus 25% for airborne concentrations of formaldehyde at the TWA and the STEL, and to within plus or minus 35% for airborne concentrations of formaldehyde at the action level as per National Institute for Occupational Safety and Health (NIOSH) approved methods. Employee exposure samples shall
be analyzed at American Industrial Hygiene Association (AIHA) accredited labs whenever possible.

G. Notification of Results

OEHS shall communicate exposure monitoring results to affected employees within 15 days of receiving the results. Notification shall be in writing, either by distribution of copies of the results to employees or by posting the results. If an employee’s exposure is greater than the PEL, the supervisor/principal investigator, with the guidance of OEHS industrial hygiene and lab safety personnel, must develop and implement a written plan to reduce employee exposure to a level at or below PELs and give written notice to the affected employees. The written notice shall contain a description of the corrective action being taken by the supervisor/principal investigators of the work area to decrease exposure.

H. Observation of Monitoring

OEHS shall allow affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to form aldehyde. If such observation occurs in an area requiring protective clothing and/or equipment, the employee's laboratory/unit shall provide the required clothing and/or equipment to the observer. The observer shall be required to use these materials under advisement of OEHS to ensure that he/she complies with all applicable safety and health procedures.

I. Record Retention

Exposure records and determinations including documentation of objective data shall be kept by OEHS for at least 30 years. (See IX. Recordkeeping, below for further details.)

IV. Regulated Areas

A. Establishing Regulated Areas
B. Limiting Access
C. Informing Contract Labor

REGULATED AREAS

A. OEHS shall assist supervisors/principal investigators in establishing regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or STEL. Entrances and access ways to these regulated areas must be posted with signs bearing the following information (signs can be obtained from OEHS):

DANGER - FORMALDEHYDE
IRRITANT AND POTENTIAL CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
B. Supervisors/principal investigators shall limit access to regulated areas to authorized persons who have been trained to recognize the hazards associated with formaldehyde.

C. Any contract labor working in or around regulated areas must be informed of the access restrictions and locations by the area’s supervisor/principal investigator.

V. PROTECTIVE METHODS

A. Engineering and Work Practice Controls

1. Examples of engineering controls include local exhaust ventilation (fume hoods/slot ventilation), general dilution ventilation, emergency safety showers, and emergency eyewash stations.

2. Examples of work practice controls include a) limiting formaldehyde exposure by scheduling formaldehyde related tasks over longer time frames instead of all at once; b) employee rotation; c) leaving the area when the task is complete to allow it to air out; d) and avoiding extremely close contact with formaldehyde sources by keeping the breathing zone away from the source or path of vapors.

3. The supervisor/principal investigator, with the advice and direction of OEHPS personnel, shall institute appropriate engineering and work practice controls to reduce and maintain exposures to formaldehyde at or below the TWA and the STEL.

4. When OEHPS has established that feasible engineering and work practice controls cannot reduce employee exposure to or below PELs, the supervisor/principal investigator shall supply employees with respirators and other personal protective equipment.

B. Respiratory Protection

1. Policy outlined in Section 15, Respiratory Protection, of this manual shall be utilized in all areas determined by OEHPS survey/monitoring to need respiratory protection for formaldehyde exposure as discussed in \textit{I.A. Contents of the Formaldehyde Policy}, above, in accordance with OSHA 29 CFR 1910.134 (b),(d),(e), and (f).

2. It is the supervisor/principal investigator's responsibility to ensure that all employees are provided with appropriate respiratory equipment, fit-tested, evaluated by a physician, and trained in respiratory usage. Where respiratory protection is required, the supervisor/principal investigator shall provide respirators at no cost to the employee after the employee has been
approved for respirator use following medical examination. The supervisor/principal investigator shall then ensure that the equipment is properly used as advised by OEHS. Fit testing for the proper respirator shall be conducted by OEHS. The respirators shall comply with the requirements of this policy and shall reduce the concentration of formaldehyde inhaled to a level that is at or below the TWA and the STEL.

3. **Respirator shall be used in the following circumstances:**

   a. during the interval necessary to install or implement feasible engineering and work practice controls;

   b. in work operations, such as maintenance and repair activities or vessel cleaning, for which OEHS establishes that engineering and work practice controls are not feasible;

   c. in work areas where feasible engineering and work practice controls are not yet sufficient to reduce exposure at or below the PELs; and

   d. in emergencies.

4. **Respirator Selection**

   The appropriate respirator, as specified in the "Minimum Requirements for Respiratory Protection Against Formaldehyde" table below, shall be selected by OEHS in accordance with those approved by the Mine Safety and Health Administration and by NIOSH consistent with provisions of OSHA 30 CFR Part 11.

5. OEHS shall determine the appropriate approved respirator required to prevent overexposure to formaldehyde. Any difficulties that an employee may have with respirator usage shall be addressed by OEHS and the supervisor/principal investigator.

6. **Respirator Usage**

   a. **Section 15. Respiratory Protection,** of this manual includes prescribed fit testing in accordance with OSHA, 29 CFR 1910.1048, Appendix E, “Qualitative and Quantitative Fit Testing Procedures,” and its outlined fit test protocols. Fit test records shall be maintained by OEHS until replaced by updated records (See IX. Recordkeeping, below for details regarding recordkeeping). Fit tests shall be performed annually.

   b. Where air purifying chemical cartridge respirators are used, the cartridges must be replaced after three hours of use or at the end of the work shift, whichever is sooner unless the cartridge contains a NIOSH-approved end-of-service indicator that shows when breakthrough occurs.

   c. Unless canisters have a NIOSH-approved end-of-service indicator, if used in atmospheres up to 7.5 ppm, they shall be replaced every 4 hours. Industrial sized canisters used in atmospheres up to 75 ppm must be replaced every 2 hours or at the end of the work shift, whichever is sooner.

   d. Supervisors/principal investigators shall permit employees to leave the work area to wash their faces and respirator facepieces as needed to prevent skin irritation from respirator use.
### Minimum Requirements for Respiratory Protection Against Formaldehyde

<table>
<thead>
<tr>
<th>Conditions for Use of Formaldehyde Concentration (ppm)</th>
<th>Minimum Respirator Requirements¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 7.5 ppm (10 x PEL)</td>
<td>Full face piece with cartridge or canisters specifically approved for protection against formaldehyde.²</td>
</tr>
<tr>
<td>Up to 75 ppm (100 x PEL)</td>
<td>Full face mask with chin style or chest or back mounted type with industrial size canister specifically approved for protection against formaldehyde. Type C supplied air respirator, pressure demand or continuous flow type with full face piece, hood or helmet.</td>
</tr>
<tr>
<td>Above 75 ppm or Unknown (Emergencies) (100 x PEL)</td>
<td>Self-contained breathing apparatus (SCBA) with positive pressure full face piece, combination supplied air respirator, full face piece positive pressure respirator with auxiliary self-contained air supply.</td>
</tr>
<tr>
<td>Firefighting</td>
<td>SCBA with positive pressure in full face piece.</td>
</tr>
<tr>
<td>Escape</td>
<td>SCBA in demand or pressure demand mode. Full face mask with chin style front or back mounted type industrial canister specifically approved for protection against formaldehyde.</td>
</tr>
</tbody>
</table>

### C. Protective Equipment and Clothing

Supervisors/principal investigators shall comply with the provisions of OSHA 29CFR 1910.32 and 20 CFR 1910.133. When protective clothing or equipment is provided under these provisions, the supervisor/principal investigator shall provide such protective devices at no cost to the employee and ensure that the employee wears them.

1. Selection

   a. Supervisors/principal investigators shall, with the approval and assistance of OEHS, select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

   b. Prevention of eye and skin contact with liquid containing 1% or more formaldehyde shall be done with the use of chemical protective clothing impervious to formaldehyde and by the use of other personal protective equipment such as goggles and face shields as appropriate to the operation.

   c. Contact with irritating or sensitizing materials shall be prevented to the extent necessary to eliminate the hazard.

¹ Respirators specified for use at higher concentrations may be used at lower concentrations.

² A half mask respirator with canisters specifically approved for protection against formaldehyde can be substituted for full face piece respirator providing that effective gas-proof goggles are provided and used in combination with the half mask respirator.
d. Where a face shield is worn, chemical safety goggles are also required if there is still a danger of formaldehyde reaching the area of the eye.

e. Full body protection shall be used for entry into areas where concentrations exceed 100 ppm and for emergency re-entry to areas of unknown concentration.

2. **Maintenance of Protective Clothing**

a. Supervisors/principal investigators shall ensure that protective equipment and clothing that have become contaminated with formaldehyde are ventilated for at least 48 hours in a chemical fume hood or other ventilated storage area, and are cleaned before reuse.

b. When ventilating formaldehyde contaminated clothing and equipment, the ventilated storage area or chemical fume hood must be labeled (labels may be obtained from OEHS) with the following information: DANGER: FORMALDEHYDE CONTAMINATED EQUIPMENT (CLOTHING). AVOID INHALATION AND SKIN CONTACT.

c. The supervisor/principal investigator shall ensure that only persons trained to recognize the hazards of formaldehyde are allowed to remove the contaminated material from the storage area for the purpose of cleaning, laundering or disposal. Clothing that has been ventilated and is ready for laundry must be placed into plastic bags labeled with the same danger warning shown in C.2.b above before delivering to laundry handlers.

d. The supervisor/principal investigator shall ensure that no employee takes home equipment or clothing that is contaminated with formaldehyde.

e. In-house laundry handlers shall be trained by OEHS in the hazards associated with formaldehyde and shall handle all labeled bags containing formaldehyde contaminated clothing with care in order to minimize exposure. Tulane laundry handlers are responsible for informing outside laundry contractors of the dangers of formaldehyde exposure and the necessary precautions to prevent exposure during processing.

f. The supervisor/principal investigator shall repair or replace, as necessary, all required protective clothing or equipment in order to ensure its effectiveness.

D. **Personal Hygiene Protection**

1. Supervisors/principal investigators shall provide “change rooms” as described in OSHA29 CFR 1910.141 for employees who are required to change from work clothing into clothing designed to prevent skin contact with formaldehyde.

2. If there is the potential that an employee may be splashed with solutions of 1% or greater of formaldehyde (e.g., by equipment failure or improper work practices) the supervisor/principal investigator shall provide conveniently located emergency showers and ensure that affected employees use these facilities immediately.

3. If there is any possibility that an employee’s eyes may be splashed with solutions containing 0.1% or greater of formaldehyde, the supervisor/principal investigator shall provide eyewash stations within the immediate work area for emergency use. All eyewash stations shall meet the requirements of ANSI standards and shall be approved by OEHS.
VI. Housekeeping for Operations Involving Formaldehyde Liquids or Gas

A. Inspections

Supervisors/principal investigators shall conduct a program of regular visual inspections to detect leaks and spills as prescribed by OEHS.

B. Preventive Maintenance

Supervisors/principal investigators shall conduct preventative maintenance inspections of equipment.

C. Spill Containment Devices

In work areas where spillage may occur, the supervisor/principal investigator shall provide spill containment devices (spill pillows, boom, etc.) for containing and decontaminating the work area, and shall ensure that the waste is prepared for disposal according to hazardous waste disposal procedures.

D. Spills

The supervisor/principal investigator shall ensure that OEHS is contacted in the event of a spill or leak, as monitoring may be required. Cleaning of small spills and leaks by employees wearing suitable protective equipment and who are trained in proper methods of clean-up and decontamination shall be done promptly under the supervision or direction of OEHS. Large spills shall be cleaned by OEHS or contract personnel who have been trained in proper emergency response procedures.

E. Disposal

All waste and debris from formaldehyde decontamination (resulting from leaks or spills) shall be placed for disposal in sealed containers bearing a label warning of formaldehyde presence and of the hazards associated with formaldehyde, and shall be disposed of by OEHS.
F. Injuries

In the event a person is injured due to an emergency involving formaldehyde, that person shall follow the medical procedures listed in VII. Medical Surveillance, below.

VII. Medical Surveillance

A. Employees Covered

1. The supervisor/principal investigator shall institute a medical surveillance program for all employees who will be exposed to formaldehyde at concentrations at or exceeding the action level or STEL. The Formaldehyde Survey (Form 01F-OEHS) located in Appendix E of this manual and/or monitoring by OEHS shall determine which employees are to participate in the program.

2. Medical surveillance shall also be available to employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde during emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, the supervisor/principal investigator, in consultation with OEHS, may rely on evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in material in concentrations less than 0.1%.

B. Examination by a Physician

1. All medical procedures shall be performed by or under the supervision of a licensed physician. The Medical Disease Questionnaire, OSHA 29 CFR 1910.1048, Appendix D (see, OSHA website www.osha.gov) shall be administered by or under the supervision of the licensed physician and kept as part of the employee's medical records. Medical services shall be provided without cost to the employee through the Occupational Medicine Clinic or Emergency Room of Tulane University Hospital and Clinic. The cost of medical services shall be the responsibility of the employee's unit.

2. The supervisor/principal investigator shall make the medical surveillance program available to employees prior to assignment to a job where formaldehyde exposure is at or above the action level or STEL and annually thereafter. The program shall also be made available promptly upon determining signs and symptoms indicative of possible overexposure to formaldehyde. Medical
examinations are also required annually for those employees wearing a respirator for formaldehyde exposure.

3. Medical surveillance includes:

   a. Completion of a Medical Disease Questionnaire (OSHA 29 CFR 1910.1048 Appendix D).

   b. A determination prepared by a licensed physician based on the evaluation of the Medical Disease Questionnaire as to whether a medical examination is necessary for employees not required to wear respirators.

   c. Medical examinations given, at the expense of the employee's unit, to any employee who may be at risk from exposure to formaldehyde as determined by a licensed physician based upon his/her review of the Medical Disease Questionnaire. At the time of initial assignment and at least annually thereafter, examinations shall be given to all employees required to wear a respirator to reduce exposure.

   d. Physical examinations with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

   e. Laboratory examination for respiratory wearers that shall include: baseline and annual pulmonary function tests, with forced vital capacity (FVC), forced expiratory volume in one second (FEV), and forced expiratory flow (FEF).

   f. Any other tests the examining physician deems necessary to complete the written opinion.

   g. Counseling on the increased risk of impairment to health to employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde.

C. Emergency Exposure Examinations

The TUHC Occupational Medicine Clinic or Emergency Room shall be available to give medical examinations as soon as possible to all employees who have been exposed to formaldehyde during an emergency.

1. The examination by a licensed physician shall include medical and work history with emphasis on any upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose or throat irritation.

2. Other examinations shall consist of those elements considered appropriate by the examining physician.

D. Information Provided to Physician

1. A copy of this Formaldehyde Policy shall be provided to the TUHC Occupational Medicine Clinic or Emergency Room, or to other Tulane designated health care providers.

2. The supervisor/principal investigator or department head shall provide the physician with the affected employee's job description or duties as they relate to formaldehyde exposure and the representative exposure level of the employee's job assignment as determined by OEHS.
3. Information concerning any personal protective equipment (PPE) and respiratory protection used or to be used by the employee as prescribed by the supervisor/principal investigator and/or OEHS shall be provided to the physician.

4. Information from previous medical exams of the affected employee within the control of the University shall be provided to the physician.

5. In the event of non-routine examination because of an emergency, persons familiar with the incident (i.e., supervisor/principal investigator or OEHS personnel) shall provide TUHC Occupational Medicine Clinic or Emergency Room with a description of how the incident or emergency occurred and the exposure the victim may have received. This information should be provided in the First Report of Occupational Injury/Illness form Form 18F-OEHS in Appendix E of this manual) that should, if possible, accompany the injured/ill employee and be presented at the time of treatment.

E. Physician's Written Opinion

1. For each examination required under this policy, a written opinion from the examining physician shall be provided to OEHS and the supervisor/principal investigator. This written opinion shall contain the results of the medical examination with the exception that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde.

   a. The physician's opinion shall indicate whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde.

   b. Any recommended limitations on an employee's exposure or changes in the use of personal protective equipment including respirators shall be given.

   c. A statement that the employee has been informed by the physician of any medical condition that would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

2. OEHS shall retain a copy of the physician's written opinion. Results of the medical examination and tests conducted by the physician, including the physician's written opinion, shall be kept as part of the employee's medical record at TUHC and shall be kept for the duration of employment plus 30 years.

3. OEHS, through the supervisor/principal investigator, shall provide a copy of the physician's written opinion to the affected employee within 15 days of its receipt.

F. Medical Removal

1. Medical removal is the removal of an employee from a job or task and/or area for medical reasons. This portion of the policy applies when an employee reports significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization attributed to workplace formaldehyde exposure. Medical removal provisions do not apply to dermal irritation or dermal sensitization when the product suspected of causing the dermal condition contains less than 0.05% formaldehyde.
2. An employee's report of signs or symptoms of possible overexposure to formaldehyde shall be evaluated as in VII.B or VII.C above. If the examining physician determines that a medical examination, as outlined in VII.B above, is not necessary, then a two-week evaluation and remediation period is established to permit the supervisor/principal investigator (in conjunction with OEHS) time to ascertain whether the signs and symptoms subside untreated or with the use of creams, gloves, first aid treatment or personal protective equipment. Industrial hygiene measures prescribed by OEHS that limit the employee's exposure to formaldehyde may also be implemented during this period. The employee shall be referred immediately to a physician prior to the expiration of the two-week period if the signs or symptoms worsen. Earnings, seniority, and benefits may not be altered during the two-week period by virtue of the report.

3. If the signs and symptoms do not subside or have not been remedied by the end of the two-week period--or earlier if signs or symptoms warrant--the employee shall be examined by a physician at TUHC Occupational Medicine Clinic or other Tulane designated health care provider. The physician shall presume, absent contrary evidence, that observed dermal irritation or dermal sensitization is not attributable to formaldehyde when the products to which the affected employee is exposed contain less than 0.1% formaldehyde.

4. Medical examinations shall be conducted in compliance with VII.B above. The physician is also referred to OSHA Appendix C of 29 CFR 1910.1048 for additional guidelines for conducting the medical examination.

5. If the physician finds that significant signs and symptoms result from workplace exposure to formaldehyde and recommends restrictions or removal, the supervisor/principal investigator shall promptly comply with the restrictions or recommendations of removal.

   In the event of a recommendation of removal, the supervisor/principal investigator shall remove the affected employee from current formaldehyde exposure, and, if possible, transfer the employee to work having no or significantly less exposure to formaldehyde. The supervisor/principal investigator must contact Human Resources, Risk Management, and OEHS as soon as possible if a recommendation of medical removal is given.

6. The department must arrange for a follow-up medical examination within 6 months after medical removal. The follow-up examination shall determine whether or not the employee can return to his/her job. The physician shall make this determination in his/her written opinion.

7. MSDSs may be relied on by supervisors/principal investigators, OEHS, or attending physicians in making the determination of the formaldehyde content of materials covered in this policy.

G. Multiple Physician Review

1. An employee has the right to have a second physician review the findings of the initial examining physician, and to have other tests performed that the second physician deems necessary and appropriate to evaluate the effects of any formaldehyde exposure.

2. After the initial physician conducts an examination or consultation for the purpose of medical removal or restriction, Risk Management or the supervisor/principal investigator must promptly notify the affected employee of his/her right to a second opinion. The Right to Second Opinion/Memorandum (Form 02F-OEHS in Appendix E of this manual) can be used for this purpose.
3. For the University to participate in or pay for multiple physician review, the following must occur within fifteen (15) days after receipt of notification of the right to seek a second opinion or receipt of the initial physician’s written opinion, whichever is later: a) the employee must inform Risk Management or the supervisor/principal investigator of his/her intention to seek a second medical opinion; and b) the employee must initiate steps to make an appointment with a second physician.

4. If the findings, determinations or recommendations of the second physician differ from those of the initial physician, Risk Management and the employee shall ensure that efforts are made for the two physicians to resolve the disparity between their opinions. If the two physicians are unable to come to a resolution, Risk Management and the employee shall designate a third physician who is a specialist in the field at issue to a) review the findings, determinations or recommendations of the prior physicians, and b) to conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary.

5. The supervisor/principal investigator shall act in accordance with the findings, determinations and recommendations of the third physician, unless the employee and Risk Management reach an agreement that is consistent with the recommendations of at least one of the three physicians, in which case, the recommendations agreed upon shall be followed.

6. The employee or his/her supervisor/principal investigator must submit copies of written medical opinions of the first, second and, if applicable, the third physician to Risk Management and OEHS.

VIII. Hazard Communication

A. Application

Communication of the hazards associated with formaldehyde in the workplace shall be governed by policies outlined in Section 12. Hazard Communication of this manual.

1. The following shall be subject to the Hazard Communication requirements: a) formaldehyde gas; b) all mixtures or solutions composed of greater than 0.1 percent (%) formaldehyde; and c) materials capable of releasing formaldehyde into the air, under reasonably foreseeable conditions of use, at concentrations reaching or exceeding 0.1 ppm (part per million).

2. The specific health hazards that the supervisor/principal investigator shall address are: irritation and sensitization of the skin and respiratory system, eye and throat irritation, acute toxicity, and cancer.
B. Labels

1. The supervisor/principal investigator shall ensure that all containers of materials listed in VII.A.1 above, bear the original container labels with the appropriate hazard warnings or OEHS in-house labels listing the hazards of formaldehyde, as specified in Section 12, Hazard Communication, of this manual, and shall have the MSDS readily available to provide the user further physical and health hazard information.

2. For materials capable of releasing formaldehyde at levels above 0.5 ppm, in addition to the above, the labels must specifically address respiratory sensitization and shall contain the words "Potential Cancer Hazard."

C. Material Safety Data Sheets

1. Material Safety Data Sheets (MSDS) providing full information on the hazardous properties of a chemical, are available through OEHS, or the OEHS website at www.som.tulane.edu/oehs. OEHS collects and distributes MSDSs and other safety information to the University’s various facilities and staff.

2. When requesting information on a chemical from OEHS, include: the exact chemical name, the manufacturer’s name, the product number, and, if possible, the Chemical Abstracts Service (CAS) number of the chemical.

3. Electronic versions of MSDSs are acceptable in the work area if: 1) users are trained in retrieving MSDSs, 2) a copy of the MSDS can be printed, and 3) arrangements have been setup for retrieval of MSDSs in the event of a power failure or other emergency.

4. OEHS must keep a paper copy of all MSDSs in its office for regulatory reporting purposes, for emergency response, and to serve as a library for user retrieval of MSDSs in the event of power outages.

D. Inventory Reports

To maintain compliance with federal, state and local laws, annual inventory reports must be submitted to OEHS to ensure that correct MSDSs are on hand for specific formaldehyde products in use for each affected work area. Supervisors/principal investigators are responsible for preparing annual inventories. DSRs shall collect and submit same to OEHS for review.

E. Employee Training

1. OEHS offers training to supervisors/principal investigators who use formaldehyde in their areas. In turn, supervisors/principal investigators train the employees under their supervision. Employee training shall be done upon initial assignment, at least annually thereafter, and whenever new conditions or hazards are introduced into the work area. Training records must be submitted to OEHS in accordance with the training policy set forth in this manual. (See, Section 3, Employee Safety Training, of this manual)

2. Exception to the above training requirements shall be given to an area where it is determined by OEHS, using objective data, that employees in the given area are not exposed to formaldehyde at or above 0.1 ppm.
3. **Training Program**

The training program shall consist of:

a. A discussion of the formaldehyde policy, the OSHA Formaldehyde Standard, and MSDSs.

b. A discussion clearly defining the purpose of the Medical Surveillance Program established in this policy in **VII** above, including: 1) a description of the potential health hazards associated with exposure to formaldehyde; 2) a description the signs and symptoms of exposure to formaldehyde; and 3) instructions to report immediately to the supervisor/principal investigator the development of any adverse signs or symptoms that the employee suspects are attributable to formaldehyde exposure.

c. A description of operations in the specific work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job.

d. The purpose for, proper use of, and limitations of personal protective equipment and clothing.

e. Instructions for handling spills, emergencies, and clean-up procedures.

f. An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of such controls; and

g. A review of emergency procedures, including OEHS notification, and specific duties or assignments of each employee in the event of an emergency.

4. **Access to Training Materials**

a. Supervisors/principal investigators shall make training materials readily available to employees and inform them of the availability and location of such material.

b. Supervisors/principal investigators **must** document all training records. The MIT's DSR shall collect and submit training documentation to OEHS for review.
IX. Recordkeeping
   A. Exposure Measurements
   B. Exposure Determinations
   C. Medical Surveillance
   D. Respirator Fit Testing
   E. Record Retention
   F. Availability of Records

IX. RECORD KEEPING

A. Exposure Measurements

OEHS shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to formaldehyde. This record shall include: 1) date of measurements; 2) operation being monitored; 3) methods of sampling and analysis and evidence of their accuracy and precision; 4) number, duration, time and results of samples taken; 5) types of protective devices worn; and 6) name, job classifications, social security numbers and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

B. Exposure Determinations

Where OEHS has determined that no monitoring is required under this policy, OEHS shall maintain a record of the objective data relied upon to support the determination that no employee is exposed to formaldehyde at or above the action level.

C. Medical Surveillance

1. OEHS shall establish and maintain a record of each employee who is subject to medical surveillance. The record shall include: a) name and social security number of the employee; b) physician's written opinion; and c) a list of any employee health complaints that may be related to exposure to formaldehyde.

2. TUHC shall maintain an accurate record of the items listed under C.1 above, as well as: a) a copy of the medical examination results including Medical Disease Questionnaires and results of any medical tests required; and b) a copy of all written physician opinions and any medical records relating to these opinions.

D. Respirator Fit Testing

OEHS shall establish and maintain accurate records for employees subject to negative pressure respirator fit testing required by the Formaldehyde Policy in accordance with OSHA 29 CFR 1910.1048.(o)(4)(ii)(A-D).
E. Record Retention

The following records shall be maintained for at least the periods indicated: 1) exposure records and determinations shall be kept for 30 years; 2) medical records shall be kept for the duration of employment plus 30 years; and 3) respirator fit testing records shall be kept until replaced by more recent records.

F. Availability of Records

1. Upon request, OEHS, Risk Management, and TUHC shall make available to OSHA for examination and copying, all records maintained as a requirement of this policy.

2. Employee exposure and medical records required by the Formaldehyde Policy shall be provided upon request (for examination and copying) of the subject employee or former employee or to anyone having the specific written consent of the subject employee or former employee in accordance with 29 CFR 1910.20(a)-(c) and (g)-(i).

End of Text — Return to Section 28, Page 1 Outline
## Needlestick & Sharp Object Injury Report

<table>
<thead>
<tr>
<th>Injury ID: (for office use only)</th>
<th>Facility ID: (for office use only)</th>
<th>Completed By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Date of Injury:</td>
<td>2) Time of Injury:</td>
<td></td>
</tr>
<tr>
<td>3) Department where Incident Occurred:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Home Department:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5) What is the Job Category of the Injured Worker? (check one box only)
- 1 Doctor (attending/staff): specify specialty
- 2 Doctor (intern/resident/fellow): specify specialty
- 3 Medical Student
- 4 Nurse: specify
- 5 Nursing Student
- 6 CNA/HHA
- 7 Respiratory Therapist
- 8 Surgery Attendant
- 9 Other Attendant
- 10 Clinical Laboratory
- 11 Technologist (non-lab)
- 12 Dentist
- 13 Dental Hygienist
- 14 Housekeeper
- 15 Laundry Worker
- 16 Security
- 17 Paramedic
- 18 Other, describe:

### 6) Where Did the Injury Occur? (check one box only)
- 1 Patient Room
- 2 Outside Patient Room (ward, nurses station, etc.)
- 3 Emergency Department
- 4 Intensive/Critical Care Unit: specify type:
- 5 Operating Room/Recovery
- 6 Outpatient Clinic/Office
- 7 Blood Bank
- 8 Venipuncture Center
- 9 Dialysis Facility (hemodialysis and peritoneal dialysis)
- 10 Procedure Room (x-ray, EKG, etc.)
- 11 Clinical Labortories
- 12 Autopsy/Pathology
- 13 Service/Utility (laundry, central supply, loading dock, etc.)
- 14 Labor and Delivery Room
- 15 Other, describe:

### 7) Was the Source Patient Identifiable? (check one box only)
- 1 Yes
- 2 No
- 3 Unknown
- 4 Not Applicable

### 8) Was the Injured Worker the Original User of the Sharp Item? (check one box only)
- 1 Yes
- 2 No
- 3 Unknown
- 4 Not Applicable

### 9) The Sharp Item was: (check one box only)
- 1 Contaminated (known exposure to patient or contaminated equipment)
- 2 Uncontaminated (no known exposure to patient or contaminated equipment)
- 3 Unknown
- 4 Other, describe:

### 10) For What Purpose was the Sharp Item Originally Used? (check one box only)
- 1 Unknown/Not Applicable
- 2 Injection, Intra-muscular/Subcutaneous, or Other Injection
- 3 Heparin or Saline Flush (syringe)
- 4 Other Injection into (or aspiration from) IV injection site or IV Port (syringe)
- 5 To Connect IV line (intermittent piggyback/IV infusion/other IV line connection)
- 6 To Start IV or Set up Heparin Lock (IV catheter or winged set-type needle)
- 7 To Draw Venous Blood Sample
- 8 To Draw Arterial Blood Sample
- 9 To Place an Arterial /Central Line
- 10 Finger stick/Heel Stick
- 11 Suturing
- 12 Cutting
- 13 Drilling
- 14 To Contain a Specimen or Pharmaceutical (glass item)
- 15 Other, Describe:

### 11) Did the Injury Occur? (check one box only)
- 1 Before Use of Item (item broke/slipped, assembling device, etc.)
- 2 During Use of Item (item slipped, patient jarred item, etc.)
- 3 Restraining patient
- 4 Disassembling Device or Equipment
- 5 In Preparation for Reuse of Reusable Instrument (sorting, disinfecting, sterilizing, etc.)
- 6 Device Left on Floor, Table, Bed or Other Inappropriate Place
- 7 Other After Use-Before Disposal (in transit to trash, cleaning, sorting, etc.)
- 8 From Item Left On or Near Disposal Container
- 9 While putting Item into Disposal Container
- 10 After Disposal, Stuck by Item Protruding from Opening of Disposal Container
- 11 Item Pierced Side of Disposal Container
6 While Recapping Used Needle
7 Withdrawing a Needle from Rubber or Other Resistant Material (rubber stopper, IV port, etc.)

13 After Disposal, Item Protruded from Trash Bag or Inappropriate Waste Container

14 Other: Describe: ____________________________
12) **What Type of Device Caused the Injury?** (check one box only) 

Needles (for suture needles see "surgical instruments")

<table>
<thead>
<tr>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12b) Disposible Syringe</td>
<td>a Insulin 22-gauge needle</td>
</tr>
<tr>
<td>b Tuberculin</td>
<td>f 21-gauge needle</td>
</tr>
<tr>
<td>c 24/25-gauge needle</td>
<td>g 20-gauge needle</td>
</tr>
<tr>
<td>d 23-gauge needle</td>
<td>h &quot;Other&quot;</td>
</tr>
</tbody>
</table>

2 Pre-filled cartridge syringe (includes Tubex*, Carpuject™ - type syringes)
3 Blood gas syringe (ABG)
4 Syringe, other type
5 Needle on IV line (includes piggybacks & IV line connectors)
6 Winged steel needle (includes winged-set type devices)
7 IV catheter stilet

**Surgical Instrument or Other Sharp Items** (for glass items see "glass")

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Lancet (finger or heel sticks)</td>
<td>48 Wire (suture/fixation/guide wire)</td>
</tr>
<tr>
<td>31 Suture needle</td>
<td>49 Pin (fixation, guide pin)</td>
</tr>
<tr>
<td>32 Scalpel, reusable (scalpel, disposable code is 45)</td>
<td>50 Drill bit/bur</td>
</tr>
<tr>
<td>33 Razor</td>
<td>51 Pickups/Forceps/Hemostats/Clamps</td>
</tr>
<tr>
<td>34 Pipette (plastic)</td>
<td>52 Petri dish, petri dish (plastic)</td>
</tr>
<tr>
<td>35 Scissors</td>
<td>53 Scalpel, disposable</td>
</tr>
<tr>
<td>36 Electrocautery device</td>
<td>54 Scalpel, disposable</td>
</tr>
<tr>
<td>37 Bone cutter</td>
<td>55 Scalpel, disposable</td>
</tr>
<tr>
<td>38 Bone chip</td>
<td>56 Scalpel, disposable</td>
</tr>
<tr>
<td>39 Towel clip</td>
<td>57 Scalpel, disposable</td>
</tr>
<tr>
<td>40 Microtome blade</td>
<td>58 Scalpel, disposable</td>
</tr>
<tr>
<td>41 Trocar</td>
<td>59 Scalpel, disposable</td>
</tr>
<tr>
<td>42 Vacuum tube (plastic)</td>
<td>60 Specimen/Test tube (plastic)</td>
</tr>
<tr>
<td>43 Specimen/Test tube (plastic)</td>
<td>61 Capillary tube</td>
</tr>
<tr>
<td>44 Fingernails/Teeth</td>
<td>62 Glass slide</td>
</tr>
<tr>
<td>45 Scalpel, disposable</td>
<td>63 Glass slide</td>
</tr>
<tr>
<td>46 Retractors, skin/bone hooks</td>
<td>64 Glass slide</td>
</tr>
<tr>
<td>47 Staples/Steel sutures</td>
<td>65 Glass slide</td>
</tr>
<tr>
<td>48 Wire (suture/fixation/guide wire)</td>
<td>66 Glass slide</td>
</tr>
<tr>
<td>49 Pin (fixation, guide pin)</td>
<td>67 Glass slide</td>
</tr>
<tr>
<td>50 Drill bit/bur</td>
<td>68 Glass slide</td>
</tr>
<tr>
<td>51 Pickups/Forceps/Hemostats/Clamps</td>
<td>69 Glass slide</td>
</tr>
<tr>
<td>52 Petri dish, petri dish (plastic)</td>
<td>70 Glass slide</td>
</tr>
<tr>
<td>53 Scalpel, disposable</td>
<td>71 Glass slide</td>
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<td>54 Scalpel, disposable</td>
<td>72 Glass slide</td>
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<td>56 Scalpel, disposable</td>
<td>74 Glass slide</td>
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<td>57 Scalpel, disposable</td>
<td>75 Glass slide</td>
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<td>58 Scalpel, disposable</td>
<td>76 Glass slide</td>
</tr>
<tr>
<td>59 Scalpel, disposable</td>
<td>77 Glass slide</td>
</tr>
<tr>
<td>60 Specimen/Test tube (plastic)</td>
<td>78 Glass slide</td>
</tr>
<tr>
<td>61 Capillary tube</td>
<td>79 Other glass item: Describe:</td>
</tr>
<tr>
<td>62 Glass slide</td>
<td>80 Other glass item: Describe:</td>
</tr>
<tr>
<td>63 Glass slide</td>
<td>81 Other glass item: Describe:</td>
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<td>64 Glass slide</td>
<td>82 Other glass item: Describe:</td>
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<td>65 Glass slide</td>
<td>83 Other glass item: Describe:</td>
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<td>66 Glass slide</td>
<td>84 Other glass item: Describe:</td>
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<td>67 Glass slide</td>
<td>85 Other glass item: Describe:</td>
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<td>68 Glass slide</td>
<td>86 Other glass item: Describe:</td>
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<td>69 Glass slide</td>
<td>87 Other glass item: Describe:</td>
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<td>88 Other glass item: Describe:</td>
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<td>71 Glass slide</td>
<td>89 Other glass item: Describe:</td>
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<tr>
<td>72 Glass slide</td>
<td>90 Other glass item: Describe:</td>
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<tr>
<td>73 Glass slide</td>
<td>91 Other glass item: Describe:</td>
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<tr>
<td>74 Glass slide</td>
<td>92 Other glass item: Describe:</td>
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<td>75 Glass slide</td>
<td>93 Other glass item: Describe:</td>
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<td>76 Glass slide</td>
<td>94 Other glass item: Describe:</td>
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<tr>
<td>77 Glass slide</td>
<td>95 Other glass item: Describe:</td>
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<tr>
<td>78 Glass slide</td>
<td>96 Other glass item: Describe:</td>
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<tr>
<td>79 Other glass item: Describe:</td>
<td>97 Other glass item: Describe:</td>
</tr>
<tr>
<td>80 Other glass item: Describe:</td>
<td>98 Other glass item: Describe:</td>
</tr>
<tr>
<td>81 Other glass item: Describe:</td>
<td>99 Other glass item: Describe:</td>
</tr>
</tbody>
</table>

8 Vacuum tube blood collection holder/needle (includes Vacutainer™ -type device)
9 Spinal or Epidural Needle
10 Unattached hypodermic needle
11 Arterial catheter introducer needle
12 Central line catheter needle (cardiac, etc.)
13 Drum catheter needle
14 Other vascular catheter needle (cardiac, etc.)
15 Other non-vascular catheter needle (ophthalmology, etc.)

28 Needle, not sure what kind
29 Other needle, please describe: _______________________

12a) **Brand/Manufacturer of Product:** (e.g. ABC Medical Company)

12b) **Model:**

98 Please Specify: _______________________

99 Unknown

13) **If the Item Causing the Injury was a Needle or Sharp Medical Device, Was it a "Safety Design" with a Shielded, Recessed, Retractable, or Blunted Needle or Blade?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yes</td>
<td>2 No</td>
<td>3 Unknown</td>
</tr>
</tbody>
</table>

13a) **Was the Protective Mechanism Activated?**

<table>
<thead>
<tr>
<th>Yes, fully</th>
<th>Yes, partially</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yes, fully</td>
<td>2 Yes, partially</td>
<td>3 Unknown</td>
</tr>
</tbody>
</table>

13b) **Did Exposure Incident Happen?**

<table>
<thead>
<tr>
<th>Before activation</th>
<th>During activation</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Before activation</td>
<td>2 During activation</td>
<td>3 After activation</td>
</tr>
<tr>
<td>4 Unknown</td>
<td>5 Unknown</td>
<td>6 Unknown</td>
</tr>
</tbody>
</table>

14) **Mark the Location of the Injury:**
15) Was the Injury?
   1  Superficial (little or no bleeding)
   2  Moderate (skin punctured, some bleeding)
   3  Severe (deep stick/cut, or profuse bleeding)

16) If Injury was to the hand, did the Sharp Item Penetrate?
   1  Single pair of gloves
   2  Double pair of gloves
   3  No gloves

17) Dominant Hand of the Injured Worker:
   1  Right-handed
   2  Left-handed

18) Describe the Circumstances Leading to this Injury (please note if a device malfunction was involved):

19) For Injured Healthcare Worker: If the Sharp had no Integral Safety Feature, Do you have an Opinion that such a Feature could have prevented the Injury?
   Describe: 

20) For Injured Healthcare Worker: Do you have an Opinion that any other Engineering Control, Administrative or Work Practice could have prevented the Injury?
   Describe: 

Cost:

1  Lab charges (Hb, HCV, HIV, other)
   Healthcare Worker Source
2  Treatment Prophylaxis (HBIG, Hb vaccine, tetanus, other)
   Healthcare Worker Source
3  Service Charges (Emergency Dept, Employee Health, other)
   Other Costs (Worker’s Comp, surgery, other)

TOTAL (round to nearest dollar)

Is this Incident OSHA reportable?  
1  Yes  2  No  3  Unknown

If Yes, Days Away from Work?  
Days of Restricted Work Activity?  

Does this incident meet the FDA medical device reporting criteria? (Yes if a device defect caused serious injury necessitating medical or surgical intervention, or death occurred within 10 works days of incident.)
1  Yes (If Yes, follow FDA reporting protocol.)  2  No

*Tubex™ is a trademark of Wyeth Ayers; Carpuject™ is a trademark of Sanofi Winthrop; VACUTAINER™ is a trademark of Becton Dickinson. Identification of these products does not imply endorsement of these specific brands.
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HazardCommunication  Section12
LaboratorySafety  Section30
RadiationSafety  Section33

HAZARDOUS WASTE SPECIALIST

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1430 Tulane Avenue, TW-16
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I. Hazardous Waste/Material Safety

A. Federal/State Regulations

The federal Environmental Protection Agency (EPA) and the Louisiana Department of Environmental Quality (LADEQ) broadly define hazardous waste as a solid waste that may cause or significantly contribute to serious illness or death, or that may pose a substantial threat to human health or the environment if managed improperly. “Solid waste” includes liquids, solids, semi-solids, and compressed gases. Because of its hazardous nature, the EPA and LADEQ, as well as the federal Department of Transportation (DOT) and the International Air Transport Association (IATA), strictly regulate all aspects of hazardous waste including generation, handling, storage, treatment, disposal, and transportation.

The University, through the Office of Environmental Health & Safety (OEHS), has incorporated these governmental regulations and guidelines in developing policies and procedures for each facility in the event of a major or catastrophic accident/spill involving hazardous materials. Procedures for managing accidents/spills that may occur in the normal course of handling hazardous materials and wastes are addressed in "standard operating procedures" for laboratories and "site-specific operating procedures" for other work areas using hazardous materials.

B. Local Regulations

Local Public Owned Treatment Works (POTW) prohibit the discharge of various hazardous substances and wastes into the public sanitary sewerage system. Contact the OEHS Hazardous Waste Specialist before discharging any material into the sewer system. For onsite waste water treatment with discharges to a public waterway, no wastes should be discharged unless a National Pollutant Discharge Elimination System (NPDES) permit has been obtained thru OEHS.

C. Role of OEHS

In addition to preparing Contingency Plans for the management of hazardous materials/wastes accidents or spills, performing hazardous materials clean up of large spills, coordinating emergency response operations, OEHS manages hazardous waste temporary storage rooms on each major campus of the University, and coordinates all hazardous waste disposal operations of the University in accordance with federal, state, and local regulators. Because Tulane is not a licensed treatment, storage, and disposal facility as defined in 40 CFR, Part 264 and 265, OEHS provides routine campus-wide, off-site disposal of hazardous waste according to federal, state, and local regulations.
OEHS is also active in providing training and safety information regarding the management of hazardous materials and hazardous wastes that includes the collection, storage (within permitted limits) and preparation of hazardous waste for disposal.

OEHS also plays an important role in compliance management. As further explained in II.A below, and in Section 2, “Environmental Health & Safety,” of this manual, OEHS works with supervisors, principal investigators, and departmental safety representatives, to achieve regulatory compliance from units handling hazardous materials/wastes. (A unit is a department, section, center, or program, or any number or configuration of these components.)

II. Compliance

A. Role of Departmental Safety Representatives

Departmental Safety Representatives (DSRs) help to ensure that the units they represent that handle hazardous materials and generate hazardous waste are in compliance with federal, state, and local regulations and University policies and procedures regarding hazardous management. DSRs also collect and submit to OEHS any required training documentation, PPE assessments, chemical inventories, or other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit’s non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University’s Environmental Health & Safety Operations Committee for consultation.

- See Section 2, Environmental Health & Safety, of this manual for information on the Compliance Management System.

B. Compliance Requirements for Grant Proposal Certification

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biosafety.
III. **Hazardous, Biohazardous, Radioactive, and Specialty Wastes: Definitions/Characteristics**

A. **Hazardous Waste** *(Ignitable, Corrosive, Reactive, Toxic)*

B. **Biohazardous and Radioactive Waste** *(Infectious, Radioactive)*

C. **Specialty Wastes** *(PCBs, Mercury Containing Devices/Equipment, Gas Cylinders, Mixed Wastes, Lead Acid Batteries)*

The EPA has expanded the definition of hazardous waste given in *LA* above to include any solid waste that is not excluded from regulation and that: 1) exhibits one or more of the characteristics of a hazardous waste, such as ignitability, corrosivity, reactivity or toxicity; 2) is listed in 40 CFR 261 as a hazardous waste; 3) is a mixture of solid waste and one or more of the listed hazardous wastes in 40 CFR 261; 4) is disposed of, burned or incinerated--or accumulated, stored, or treated (not recycled) before burning or disposal; 5) is recycled in a manner constituting disposal, burned to recover energy or to produce a fuel, or accumulated speculatively.

A. **Hazardous Waste**

Characteristics identifying hazardous waste include: **ignitability, corrosivity, reactivity, and toxicity**. Any waste that exhibits any of these characteristics is considered to be hazardous waste whether or not it is listed by the EPA or LADEQ.

1. A waste is characterized as **ignitable** if it may cause a fire during routine waste disposal and storage conditions. There are several ways to identify ignitable wastes depending on whether the waste is liquid, solid, or a compressed gas. A waste is ignitable if:

   a. it is a liquid other than an aqueous solution containing less than 24% alcohol by volume that has a flash point of 140° F (60° C) or less.

   b. it is not a liquid and is capable of causing a fire at standard temperature or pressure through friction, absorption of moisture, or spontaneous chemical changes.

   c. it is a compressed gas classified as flammable by the Department of Transportation (DOT). DOT's definition of flammable is a material that has a flash point below 100°F.

   d. it is an oxidizer as defined by the DOT. An oxidizer is defined as a material that yields oxygen readily and stimulates the combustion of organic materials. Examples of oxidizers include chlorates, nitrates, permanganates, or organic peroxides.
2. A waste is characterized as **corrosive** if it is liquid or solid and may cause visible destruction or irreversible alteration on human skin, or if it is a liquid that has a severe corrosion rate on steel. A waste is corrosive if: a) it is a liquid and has a pH of less than or equal to 2.5 or a pH greater than 12.5; b) it is a solid and has an aqueous solution pH of less than or equal to 2.5 or a pH greater than 12.5. (NOTE: The City of New Orleans has a stricter pH requirement: less than 5.5 or greater than 10.0.)

3. A waste is characterized as **reactive** if it is liquid, solid, or gas and produces dangerous gases and/or fire when mixed with air, water or undergoes pH changes. A waste is reactive if:

a. it reacts violently with water or air.

b. it forms potentially explosive mixtures with water or air.

c. it contains cyanide or sulfide-bearing wastes that, when exposed to pH conditions between 2 and 12.5, can generate sufficient toxic gases, vapors, or fumes to pose a danger to human health or the environment.

d. it is capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

4. A waste is characterized as **toxic** if it is liquid, solid or gas and may have an acute or chronic effect on human health or the environment. Contact OEHS for a list of chemical substances (as well as organochloride and organophosphate pesticides) that are considered toxic by EPA, LADEQ, and OSHA standards. Waste containing any of these chemicals is also considered toxic.

**B. Biohazardous and Radioactive Waste**

Biohazardous and radioactive wastes can be identified by their **infectious** or **radioactive** characteristics. Any waste that exhibits either of these characteristics is considered to be a special waste whether or not it is listed by the EPA or LADEQ.

1. **Biohazardous Waste**

A waste is characterized as "biohazardous" or **Potentially Infectious Biomedical Waste (PIBW)** if it contains pathogens with sufficient virulence and quantity that exposure by a susceptible host could result in an infectious disease. PIBW includes medical waste, infectious waste as defined in **Section 22, Biological Safety**, of this manual, and as may be defined in Louisiana law or code governing special waste, and waste considered likely to be infectious by virtue of what it is or how it may have been generated in the context of health care or health care-like activities. Excluded from the definition of PIBW are eating utensils, animal carcasses and bedding, and very small quantities of uninfected human and animal surgical waste.

PIBW includes but is not limited to the following:

a. cultures and stocks of infectious agents and associated biologicals, including cultures from medical and pathological laboratories, from research and industrial laboratories;

b. human pathological wastes including tissue, organs, body parts and fluids that are removed during surgery or autopsy;
c. human blood, human blood products, blood collection bags, tubes, and vials;

d. sharps used or generated in health care or laboratory settings. Sharps include glass fragments, needles, syringes, scalpels, scalpel blades, pipettes and other medical instruments or laboratory waste capable of puncturing or lacerating skin;

e. bandages, diapers, "blue pads," and other disposable materials IF they have covered infected wounds or have been contaminated by patients isolated to protect others from the spread of infectious diseases;

f. any other refuse that has been mingled with PIBW.

2. Radioactive Waste

A waste is characterized as "radioactive" if it is capable of emitting radioactive alpha, beta, or gamma energies. Radioactive waste must be disposed of according to guidelines set forth in the University’s Radiation Safety Manual.

C. Specialty Waste

Specialty wastes are wastes that have a hazardous composition but are regulated in a different manner because of the problems they impose for storage and disposal. This category includes: wastes that are a combination of infectious and radioactive wastes (such as an infectious waste that is contaminated with a radioactive isotope); polychlorinated biphenyls (PCBs); gas cylinders (such as lecture bottles and acetylene bottles); and mercury containing devices.

1. Polychlorinated Biphenyls (PCBs)

PCBs are highly regulated compounds under the federal Toxic Substances Control Act (TSCA). PCBs, which have been used as coolants and insulators in electrical transformers since 1929, have been found to cause liver ailments, skin lesions, tumors, and growth and reproductive problems. PCBs do not break down in the environment and once in the body through inhalation, ingestion, or skin absorption they remain in tissues indefinitely. Also, poisonous dibenzofurans and dibenzodioxins are carried by the smoke and soot resulting from a transformer fire.

PCBs can be found in transformers, capacitors, electrical switching gear, electrical heat transfer systems, electron microscope transformers, etc. As of October 1990, all electrical transformers containing PCBs greater than 50 ppm must be replaced or retrofitted to a non-PCB status (<50 ppm), or electrically protected with routine inspections and record keeping.

a. Prohibition

1) Most PCB use has been prohibited at the production level. The EPA prohibits the processing, distribution, and use of PCBs in other than a "totally enclosed manner," except when excluded specifically by law. Waste oil containing any detectable amount of PCBs may not be used as a sealant, coating, or dust control agent.

2) PCBs in any quantity may continue to be used in optical liquids, in small quantities for research and development, as a mounting medium in microscopy, in compressors and natural gas pipeline liquids, in circuit breakers, reclosers and cables for the rest of their useful lives.
b. PCBUseatTulane

1) All known transformers containing PCBs at Tulane have been replaced or retrofilled. The most likely location of PCBs is in small lighting ballasts. New ballasts should not contain PCBs.

2) Oiled filled transformers and electrical switching gear must be serviced or filled with only PCB-free material.

3) New equipment that may be purchased must not contain any PCBs.

c. Disposal

If any remaining PCBs are discovered, OEHS should be contacted to arrange for proper disposal. The exception is that electrical ballasts may be disposed in the regular trash one or two at a time; OEHS need only be notified.

d. Fines

Failure to meet EPAregulations for use and disposal of PCBs could result in stringent fines.

2. MercuryContainingDevices/Equipment

Mercury is toxic due to its solubility (absorbed into the body) and low vapor pressure. Inhaled vapors of mercury can cause metal fever, nausea, vomiting, diarrhea and dyspnea. Chronic exposure to mercury can cause weight loss, mental depression, insomnia, irritability, tremors, bronchiolitis and pulmonary edema.

a. StorageandDisposal

1) To prevent used mercury-containing devices (lamps, HID, etc.) from breaking, lamps must be properly packed for storage and disposal. When lamps are removed and replaced with new lamps (e.g., during group relamping), the used lamps should be packed in the cardboard boxes that contained the replacement lamps. Boxes containing the hazardous waste must be properly labeled as mercury-containing waste. OEHS shall provide each facility responsible for these operations, a one-time supply of labels and reorder information.

2) In addition to proper packing, care must be taken when stacking boxes of used lamps for storage to avoid crushing bottom boxes. When using a contractor to maintain a lighting system and/or for building renovations, a safe storage arrangement for mercury-containing devices shall be specified in the contract. Signs and notices (and training) shall be used to show employees where and how to store lamps. Stacks are to be piled no higher than five feet so that lamps on the bottom are not crushed by weight. All broken lamps shall be put into separate, airtight containers (preferably metal 55 gal drums) that shall remain sealed until final disposal. OEHS must be apprised of the storage location and chosen method of recycling or disposal.
3) Lamps and other mercury-containing devices must be disposed of as hazardous waste and/or as recyclable materials. If such devices are to be recycled, the facility manager may choose the recycler (the name and telephone number of the chosen vendor must be provided to OEHS). If such devices are to be disposed as hazardous waste, OEHS must be contacted to arrange for proper disposal. Lamps may be stored up to a year before final disposal, or a maximum of 35,000 four-foot lamps can be stored at any one time.

b. Recycling

Any lamp or mercury-containing device can be recycled at permitted or licensed recycling facilities regardless of whether the device tests hazardous (the State of Louisiana considers all lamps as hazardous waste). Recycling separates the toxic substances (such as mercury) from glass, aluminum and other lamp components so that all materials may be reused in manufacturing other products. If a lamp crusher or compactor is used before final disposal, it must meet state and local approval for worker protection against mercury-vapors. If other a lamp crusher or compactor is to be used, a permit must be obtained. Contact OEHS.

c. Prohibition

Mercury-containing devices shall not be placed in a solid waste container/dumpster for final disposal. These devices/lamps must be collected, properly stored and labeled by facility managers and/or designees for final disposal (recycling and/or hazardous waste landfilling). No one is permitted to crush lamps by stepping on, hammering or using heavy objects to compact. If a lamp crusher or compactor is to be used, a permit must be obtained. Contact OEHS.

d. Spill/Leak Procedures. See V.C further in this section.

e. Fines

Failure to meet current regulations for use and disposal of mercury-containing devices could result in heavy LADEQ fines. Any fine shall be borne by the responsible facility or unit.

f. Minimize Use

Whenever possible, minimize the use of mercury containing equipment (e.g., use mercury free thermometers when possible).

g. MercuryContainingDevices/Equipment

According to the Toxicity Characteristic Rule issued under the Resource Conservation and Recovery Act (RCRA), when mercury-containing lamps (light bulbs) and devices meet specific criteria, they may be considered as hazardous, and as such, must be managed as hazardous waste when they are disposed, unless they are household waste or are regenerated by an exempted small quantity generator. The LADEQ also regulates all used mercury-containing devices such as lamps and thermostats as hazardous waste. Louisiana law also mandates that these materials be either disposed of as hazardous waste or recycled. Mercury-containing lamps include fluorescent, high pressure sodium, mercury vapor and metal halide lamps. Mercury-containing devices include thermometers, pressure cups, barometers and thermostats.
3. **GasCylinders/LectureBottles**

Gas cylinders, or lecture bottles, should be returned to the manufacturer. If possible, avoid use of this equipment because it is one time fillable and very costly to dispose.

4. **MixedWastes**

Do not mix wastes (e.g., keep chlorinated solvents separate from non-chlorinated solvents, radioactive separate from chemical, etc.). When wastes are mixed, disposal costs increase.

5. **LeadAcidBatteries**

Lead acid batteries are considered a universal waste and can be recycled. Contact OEHS for more information.

### IV. Hazardous Waste Management

#### A. Hazardous Waste Generators

The EPA defines hazardous waste large-quantity generators as those that produce or accumulate and dispose of over 1,000 kilograms (2200 lbs) of hazardous waste in a one month period. The University, which produces hazardous waste in excess of 1000 kilograms per month in certain facilities, is classified as a hazardous waste large-quantity generator.

The Resource Conservation and Recovery Act authorizes the EPA to set standards for generators of hazardous wastes. Under these standards, the generator must: 1) notify the EPA if hazardous waste is generated; 2) prepare and follow-up a manifest of off-site shipments; 3) make sure shipments reach the designated facility; 4) properly package, label, mark, and placard the waste; and 5) keep records and submit reports as required by federal, state and local regulations. These things are done by OEHS through the coordination of off-site disposal.

#### B. Handling Hazardous Wastes

1. No hazardous wastes (toxic, flammable, or reactive) are to be discharged into the drains or put into the trash. Arrangements for disposal of hazardous wastes must be with OEHS. Waste containers must be compatible with the waste (i.e., non-reactive with the waste), and waste must be properly stored until pickup is arranged by OEHS. Special containers with self-closing covers should be used for volatile liquids and spent chemicals.
2. Corrosives such as alkalies and acids must be neutralized between a pH of 5.5 and 10.0 in order to be disposed in drain using copious amounts of water (City of New Orleans Sewage and Water Board requirement). If not, these must be collected for disposal (contact OEHS). All corrosives with a pH less than 5.5 or greater than 10 must be disposed of as hazardous waste.

3. Handle wastes cautiously. Many hazardous materials/wastes can deteriorate over a period of time and cause more harm than the original material. Do not open containers to determine the quantity of the contents; loosening a lid or cap could cause serious harm. Avoid jarring or shaking containers. Wear proper protective clothing and equipment when handling hazardous wastes.

4. Read the Material Safety Data Sheet (MSDS) for the hazardous material before handling.

5. Clearly mark the hazardous waste with labels indicating content (full chemical name) and associated hazards. For hazardous waste, include the words “Hazardous Waste” as well as the start date of accumulation. For unknown materials, make every effort to identify the contents or hazards such as pH, odor, flammable. Commercial disposal firms do not accept unknowns, and OEHS cannot offer valid assistance without some knowledge of the nature of the materials. If possible, contact the person(s) who generated the material. Identifying the material as solid, liquid, pH, odorous or flammable is helpful. A container must be kept capped unless the contents is being poured. When pouring from one container to another using a funnel in the receiving container, remember to: a) cap the original container, b) remove the funnel from the receiving container, and 3) cap the receiving container.

6. Gas cylinders shall be returned to the vendor when gas has expired and must be handled according to NFPA rules (see Section 26, Fire Safety, of this manual) and Compressed Gas Association standards (see Section 30, Laboratory Safety, of this manual regarding gas cylinders). Since rental on most cylinders involves monthly charges, empty or unwanted cylinders should be returned to the vendor as soon as possible. Purchasing can usually offer assistance with return of cylinders. The purchase of small gas cylinders, or lecture bottles, should be avoided if possible. These cannot be refilled and are very costly to dispose.

7. Any unwanted experimental pesticides shall be returned to the manufacturer.


9. Biological, medical and/or infectious materials must be handled in strict accordance with sanitary codes. It must be rendered non-infectious and non-recognizable by an approved federal, state, and local method before final disposal into a solid waste stream. Methods such as sterilization and autoclaving may render the material non-infectious but not non-recognizable. An additional method such as incineration may be needed to render the material non-recognizable. All biological, medical and infectious materials are to be rendered non-infectious and non-recognizable before they can be placed in a solid waste container.

C. Preparing Waste for Collection and Disposal

Disposal options available depend on the type of hazardous waste. Every effort is made to properly and economically dispose of unwanted materials in a safe and proper manner within regulatory requirements. In order for OEHS to provide technical assistance with and recommendations for disposal of hazardous waste, information concerning the materials is imperative.
The following instructions shall be followed when preparing hazardous and infectious wastes for disposal. Failure to follow these instructions may result in heavy regulatory fines.

1. Chemical Waste

a. Determine whether or not the waste is hazardous (see III.A-C above). OEHS should be consulted for this determination if there is any question. If OEHS determines that the waste is non-hazardous, it shall give instructions for the proper disposal of the waste into a regular sewer system or a solid waste pickup system.

b. Label the hazardous waste properly. The words “Hazardous Waste,” the full name of the chemical to be discarded, its associated hazards, and the start date of accumulation must be marked on the container. Do not abbreviate names. If only a trade name is given, list the trade name, any descriptive material on the label, and the vendor and/or manufacturer’s name and address. OEHS shall assist in obtaining contents information from the vendor or manufacturer.

c. Do not mix hazardous waste with radioactive, biological, and noncompatible materials.

d. When hazardous waste is ready for pickup, those who generate hazardous waste at the Uptown campus, Hebert campus, and the JBJ Building should notify OEHS. Those who generate hazardous waste at the Medical School building should bring their waste to the designated storage area on appointed days. TNPRC generators should place their hazardous waste in the Carriage House to be handled by OEHS. (Submit a Hazardous Waste Request form: see OEHS website)

e. If there has to be a period of storage before disposal (e.g., until enough material has been collected for bulking), the waste must be released to OEHS. Because OEHS has very limited storage space, however, it may occasionally be necessary to store the waste material in the laboratory where it was generated until pick up can be arranged. Wastes shall be stored in containers that are compatible with the waste material. Waste tags are available upon request from OEHS, and must be used for all hazardous wastes.

f. Empty containers are not considered hazardous waste. Simply deface the label(s) and discard as regular solid waste.

2. Biohazardous Waste

a. Do not mix other trash such as coke cans, food, office trash, etc., with biohazardous waste.

b. Biohazardous waste shall be placed in a red bag and containerized for proper disposal through Facilities Services at the Medical School, JBJ, Perdido Street 1 and Tidewater buildings. If the infectious waste contains sharps, the sharps must be placed in a sharps container for proper pick-up and disposal. (Note: Red bags and sharps containers may be obtained through Purchasing.)

c. The Uptown campus and other satellite clinics shall have their biohazardous waste disposed of by an approved medical waste disposer. Arrangements shall be made by the individual generator. OEHS may be contacted for information regarding approved disposal companies.
d. TNPRC shall use its waste disposalequipment and procedures to decontaminate and render non-recognizable, all biohazardous wastes generated at the facility.

3. Non-Infectious Waste

a. Non-infectious animal carcasses shall be sealed in plastic bags and sent to the TUHS C Vivarium for incineration. Other campuses should arrange with the TUHSC Vivarium for disposal of their non-infectious animal carcasses.

b. TNPRC shall use its waste disposal equipment and procedures to dispose of hazardous, non-infectious waste generated at TNPRC.

D. Waste Minimization

Waste minimization refers to any effort to reduce the load on hazardous waste treatment, storage or disposal facilities by reducing the quantity or the toxicity of hazardous wastes generated. Federal, state, and local government now require that institutions generating hazardous wastes prepare and implement “waste minimization” policies. As colleges and universities have been identified as significant generators of hazardous waste, the EPA and IEQ monitor the efforts of such institutions to reduce hazardous waste generation.

Waste minimization, while critical to protecting the environment, can also greatly reduce the high cost of waste handling and disposal. It is therefore imperative, for both environmental and economic reasons, that all units that generate hazardous waste comply with the waste minimization guidelines outlined below which, if properly implemented, will economically and effectively reduce or eliminate the amount of waste generated by the University.

1. Good Housekeeping

Departments should guard against the excessive use of hazardous materials and by extension the amount of waste generated. Use only the prescribed amount of materials, and ensure that all valves, pumps, and dispensers are closed tightly to prevent loss of materials through spills and leakage.

2. Substitution

Substitute less toxic or non-toxic materials if at all possible. For example, substitute sodium hypochlorite for perchloric acid for an oxidation-reduction experiment. Another example is the substitution of a biodegradable cleaner instead of mineral spirits for paint brushes and tools.

3. Segregation of Wastes

Waste can be segregated by a) not mixing regular trash with chemical waste; 2) not mixing radioactive, biological and chemical waste together, and 3) minimizing chemically contaminated labware.

4. Recycling, Reclaiming, Redistillation

More often than not, it is less expensive to recycle, reuse, or reclaim a hazardous material than it is to purchase a new material. Recycling methods can be useful in many processes in places such a pathology labs and paint shops.
With centralization of the purchase and distribution of hazardous materials, efforts can be made to determine whether other departments can use an unwanted material. Lists of unwanted chemicals can be distributed to other departments within a single campus, or Materials Management for each campus may exchange lists. Anyone wishing to claim the material may do so at no cost.

Redistillation as a method for reusing some solvents is also encouraged. Large volume solvent users may find distillation to be a suitable method of reusing materials and reducing disposal costs. Also, methods of volume reduction to concentrate wastes should be pursued by those generating the waste.

5. Employee Training

In training employees in the use, handling, storage and disposal of hazardous materials, emphasis should be placed on techniques that reduce the amount of waste generated. Employees who generate hazardous wastes should attend annual training sessions on hazardous materials provided by OEHS and/or their supervisor/principal investigator/DSR.

6. Minimizing Experiments

Efforts to minimize waste may also be accomplished by a) modifying lab processes to reduce the scale of experiments, giving preference to small scale experiments that use less chemicals, produce less waste, and reduce chemical exposure; b) improving laboratory operations to reduce the number of experiments; and c) chemically treating the waste from experiments especially by neutralization and detoxification such as by precipitation of the hazardous material.

### V. Hazardous Materials/Wastes Spill Control

**A. Contingency Plans and Customized Operating Procedures**

Accidents involving hazardous materials, including hazardous wastes, require immediate action to prevent fire, explosion, injury, or death. It is therefore imperative that all personnel handling such materials be well informed and able to respond quickly.

1. **Contingency Plans**

Contingency plans for each facility have been developed by OEHS in the event of a major or catastrophic accident or spill involving hazardous materials/wastes. These plans are extensive
and provide for assistance from federal, state and local authorities, fire and police units, etc. Contingency Plans are implemented by OEHS.

2. Customized Operating Procedures

*Standard operating procedures* (SOP) for laboratories and *site-specific operating procedures* for other areas include procedures for handling accidents or spills that may occur in the normal course of handling hazardous materials. SOPs and site-specific procedures are “customized” to address the handling of hazardous materials present in a specific lab or work area. OEHS reviews these customized procedures annually.

B. General Guidelines

The following general guidelines should be included in all SOPs or site-specific operating procedures for handling spill incidents involving hazardous materials. Also see, *Section 1. Emergency Response*, of this manual.

1. **Immediate Steps**

   a. Address spills to the body (skin, eyes) by washing affected area with copious amounts of water. Caution: Some hazardous materials are water reactive and should be brushed off before water is used. All hazardous materials used in the area are identified in the chemical inventory for the area. Information on handling spills of hazardous materials can be found on the MSDS as well as in the SOPs or site-specific operating procedures.

   b. Alert persons in the immediate area and evacuate if necessary. If contamination is a possibility, contaminated persons (or persons suspected of contamination) should be evacuated to a holding area until exposure can be assessed.

   c. If possible, confine the spill in a safe and proper manner to prevent spread or further contamination. For example, closed doors, upright spilled containers, pull downhood sashes, etc.

   d. Notify the immediate supervisor/principal investigator and contact OEHS either directly or through security.

   e. If proper equipment and supplies are available, and you are trained in and familiar with their use, use them to implement containment procedures; otherwise, OEHS shall respond to contain, remove, and dispose of the spilled material. Personnel from the appropriate department shall be required to provide support to OEHS personnel in the uncontaminated area.

   f. Spill cleanup materials for small spills should be readily available in the area and should be supplied by the supervisor/principal investigator/unit.

2. **Cleanup and Disposal**

   a. All spills should be cleaned up and disposed of in accordance with the SOPs or site-specific operating procedures for that lab or work area. If it is determined that the chemical or biohazard spill can be cleaned by the first responder, then proceed as follows:
1) Put on the appropriate personal protective equipment (PPE). SOPs or site-specific operating procedures should include information on the correct PPE to use in the event of a spill. Contact OEHS if there are any questions concerning appropriate PPE.

2) Contain the spill to the smallest area possible by placing vermiculite, spill booms (pigs), spill pillows, oil dry (cat litter), or (in certain cases) towels around the spill to form an outside barrier (dike). This will reduce the size of the spill and the rate of evaporation.

3) Once the material is absorbed by the vermiculite, spill booms, spill pillows, or oil dry, place it in an appropriate container. Seal and label the container with the name of the spilled material.

b. The spilled material is considered hazardous waste and should be disposed of according to hazardous waste procedures. Under no circumstance should it be discarded into the sewer system or into trash receptacles.

c. After the spill is cleaned, the following decontamination procedures should be performed:

1) Remove all PPE and dispose of or clean thoroughly. Discard all severely contaminated PPE and disposable PPE into a waste container or bag to be disposed of with the spilled material.

2) After cleanup, wash hands and exposed skin with soap and water.

3) For a biohazard spill, clean the area with a 10% bleach solution or other appropriate disinfectant. For all other spills, clean the area with soap and water.

d. Radiation spills should be cleaned up in accordance with procedures outlined in the Radiation Safety Manual.

C. Mercury Spills

1. Avoid or minimize spills of elemental mercury. Avoid skin contact.

2. If possible, clean up gross spills with pipette and suction bulb. Ventilate area well to remove mercury vapor.

3. Do not place elemental mercury waste in drains. Contact OEHS for disposal of mercury waste and, if needed, for help in mercury spill clean up.

4. Keep in mind that the "no eating or smoking" rule is especially important where mercury is handled. Mercury can be picked up on the tips of cigarettes and is easily absorbed by ingestion and inhalation. Chronic exposure and absorption of mercury may lead to metallic taste in mouth, a "lead line" (gray line) around gums, and neurologic problems (irritability, hyperflexation, coma).

5. For mercury spills in ovens, see Section 30 Laboratory Safety, of this manual.

End of Text—Return to Section 29, Page 1 Outline
Information to be Provided to the Evaluating Healthcare Practitioner Form
(Routes and Circumstances of Exposure Incident)

Please Print
Employee's Name____________________________________Date__________________________
Date of Birth________________________________________SS#___________________________
Telephone (Business) __________________________(Home)______________________________
Job Title____________________________________________
Date of Exposure_____________Time of Exposure __________AM ___ PM____
Hepatitis B Vaccination Status______________________________________________________
Location of Incident_______________________________________________________________
Describe what job duties you were performing when the exposure incident occurred __________
________________________________________________________________________________
________________________________________________________________________________
Describe the circumstances under which the exposure incident occurred (what happened that resulted
in the incident) _____________________________________________________________________
________________________________________________________________________________
What body fluid(s) were you exposed to? ______________________________________________
________________________________________________________________________________
What was the route of exposure (e.g., mucosal contact, contact with nonintact skin, percutaneous)?
________________________________________________________________________________
Describe any personal protective equipment in use at time of exposure incident __________
________________________________________________________________________________
________________________________________________________________________________
Did PPE fail? __________If yes, how? ________________________________________________
________________________________________________________________________________
Identification of source individual(s) (names) __________________________________________
________________________________________________________________________________
________________________________________________________________________________
Other pertinent information________________________________________________________________
________________________________________________________________________________
Information to be Provided to the Evaluating Healthcare Practitioner Form
(Routes and Circumstances of Exposure Incident)

WRITTEN OPINION

To the Evaluating Physician:

After your evaluation of this Tulane University employee, please assure that the following information has been furnished to the employee and provide your initials beside the following statements:

(A) ___________ The employee has been informed of the results of this evaluation.

(B) ___________ The employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation and treatment.

No other findings should be included on this report.

Please give one copy of this completed form to the patient (Tulane employee) and send an additional copy by mail or fax to:

Tulane University OEHS
Bloodborne Pathogens Coordinator
1430 Tulane Ave. TW-16
New Orleans, LA 70112

Bloodborne Pathogens secure fax line: (504) 988-2297

Thank you for your evaluation of this employee.

___________________________________________
Physician's signature

___________________________________________    ____________
Physician's name (printed)                         Date
Information to be Provided to the Evaluating Healthcare Practitioner Form
(Routes and Circumstances of Exposure Incident)

Notice to the Evaluating Healthcare Provider:

Post-exposure evaluation and follow-up are to be provided to the employee consistent with the requirements of 29 CFR 1910.1030 (OSHA’s Bloodborne Pathogens Standard is available in full online at: http://osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051).

Therefore, upon presenting for evaluation, the Tulane employee should provide you with the following:

- Hepatitis B vaccination information history/record
- A completed “Information Provided to the Healthcare Provider” form

Available to you is the following support:

- National HIV/AIDS Clinicians' Consultation Center, University of California - San Francisco.

Exposure to blood-borne pathogens can present serious risks to health care providers. Prompt post-exposure treatment for HIV and hepatitis B virus can be effective, but because each exposure case is unique, determining who should receive prophylaxis and which drugs are most appropriate is not always easy.

The National Clinicians' Post-Exposure Free Prophylaxis Hotline (PEP line 1-888-448-4911) offers treating clinicians up-to-the-minute advice on managing occupational exposures (i.e., needlesticks, splashes, etc.) to HIV, hepatitis and other blood-borne pathogens.

PEP line clinicians will respond to your call 24 hours a day, 7 days a week

- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis (available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm)

- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis (available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm)

⚠ A decision to start antiretroviral therapy should be made within 2-4 hours post-exposure. Tulane University Infectious Disease Physicians are available by pager: (504) 663-9557.
SECTION 30
LABORATORY SAFETY

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HazardCommunication Section12
HazardousMaterialsSafety Section29
Injury/IllnessReporting Section4

InspectionandCompliance Section13
PersonalProtectiveEquipment Section14
RespiratorySafety Section15
Laboratory Ergonomics

Research exposes laboratory personnel to a number of risk factors, including WMSD hazards. Laboratory personnel are therefore encouraged to review the OEHS website at http://tulane.edu/oehs/ergonomics/ergonomics2.cfm for a “checklist” of ergonomic concerns relevant to lab work and the lab environment. This checklist is adapted from checklists made available by the Centers for Disease Control and the National Institute of Environmental Health Sciences and has been modified for Tulane’s use.

Employees interested in reviewing CDC and NIEHS checklists may do so at the following websites. Please note, however, that the information on these sites does not necessarily reflect the ergonomic policies and procedures in place at Tulane University.

- Centers for Disease Control website: http://www.cdc.gov/od/ohs/Ergonomics/labergo.htm
I. Chemical Hygiene Plan (Laboratory Standard)

A. ChemicalHygienePlan
B. StandardOperatingProcedures C. ExposureMonitoring
D. Ventilation,FumeHoods&Engineering ControlMeasures
E. PersonalProtectiveEquipment
F. EmployeeInformationandTrainingProgram
G. PriorApprovalforUseofHighRiskSubstances
H. MedicalConsultation,Examinations,Surveillance I. WorkwithSelectCarcinogens,ReproductiveToxins

andSubstanceswithaHighDegreeofAcuteToxicity

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<td>I. CHEMICAL HYGIENE PLAN (LABORATORY STANDARD)</td>
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The Occupational Safety and Health Administration’s (OSHA) GeneralIndustry Standards regarding chemical hygiene were designed primarily for industrial settings where use of chemicals often involves a single chemical substance used constantly in large quantities. In research laboratories, however, the situation is reversed: multiple hazardous substances are used intermittently on a small scale.

Realizing that a separate standard was needed for laboratories, OSHA developed a Laboratory Standard unique to laboratories to protect laboratory workers from excessive exposure to hazardous chemicals. In compliance with OSHA’s Laboratory Standard, the University, through the Office of Environmental Health and Safety (OEHS), has developed the Chemical Hygiene Plan presented in this Section 30 of the Environmental Health and Safety Policies and Procedures Manual.

A. Chemical Hygiene Plan

OEHS reviews and evaluates the Chemical Hygiene Plan (CHP) annually and prepares updates as needed. In addition to its availability in this manual, copies of the CHP may be obtained from OEHS by University employees, their designated representatives or other interested parties.

1. Applicability

The CHP applies to all laboratory facilities where relatively small quantities of multiple hazardous chemicals are used on a non-production basis. Most laboratories at Tulane meet this definition and criteria.

The CHP does not apply: a) to particular chemical use in a laboratory when the particular chemical comes under a specific OSHA standard that preempts the Laboratory Standard. An example of this is formaldehyde use in histology, pathology, and anatomy laboratories, which would be governed by the Formaldehyde Standard rather than by the Laboratory Standard. The plan does not apply b) if exposure limits for a particular OSHA regulated chemical are routinely being exceeded. In such cases, more stringent rules are needed to comply with OSHA's General Industry Standards. The CHP does not apply c) to laboratory uses of hazardous chemicals that provide no potential for employee exposure such as procedures using chemically-impregnated
test media (e.g., Dip-and-Read color strip tests), or commercially prepared kits where all reagents needed to conduct the test are contained in the kit (e.g., pregnancy test kits).

2. **Provisions**

The CHP provides a) a guideline for general operating procedures to follow when hazardous chemicals are used; b) criteria to determine and implement control measures for reducing employee exposure; and c) specific measures to ensure protection from hazardous and toxic exposures such as adequate performance of fume hoods and other protective equipment.

The CHP also addresses a) provisions for employee information and training; b) circumstances requiring prior approval of high risk substances from the University’s administration; c) provisions for medical consultation and examinations; d) designation of a chemical hygiene officer; and e) provisions for worker protection for work with particularly hazardous substances (select carcinogens, reproductive toxins, and substances with a high degree of acute toxicity).

The CHP is supplemented by standard operating procedures specific to a given laboratory that are written by the laboratory’s supervisor/principal investigator based on materials present in his/her particular lab. (Contact OEHS for a list of hazardous chemicals used at Tulane or to learn how employees are informed of hazardous chemicals. *Also see, Section 12, Hazard Communication*, of this manual.)

3. **Responsibility for Implementation**

Success in implementing the CHP is based, in large part, on the cooperation of supervisors/principal investigators and other laboratory employees.

**Employees must** a) be alert to the potential hazards of materials used in their work areas; b) follow appropriate work practices established by their supervisors/principal investigators and the University’s administration to protect their health and safety; c) plan and conduct each operation in accordance with the University’s chemical hygiene procedures; and d) develop good personal chemical hygiene habits.

**Supervisors/Principal Investigators must** a) compose and implement chemical hygiene rules specific to their laboratories; b) ensure that their employees follow the rules; c) determine the required levels of protective apparel and equipment, and ensure that this protective equipment is available and in working order; d) make certain that appropriate laboratory safety training is provided; e) routinely (at least quarterly) inspect their labs and equipment and report unsafe conditions and practices to the departmental safety representative and OEHS for review; f) be current on legal requirements concerning regulated substances; and g) ensure that facilities, equipment, and training are adequate for the material being used.

4. **OEHS and the Chemical Hygiene Officer**

An OEHS staff member, qualified by training and/or experience to provide technical guidance in the development and implementation of the CHP, is designated as the **Chemical Hygiene Officer** (CHO). The CHO shall:

   a. work with administrators, supervisors/principal investigators, project directors, and other employees to develop and implement appropriate chemical hygiene policies and practices;
b. give guidance in the procurement, use, and disposal of chemicals used in the laboratory;

c. provide training to supervisors/principal investigators regarding OSHA’s Laboratory Standard and the Chemical Hygiene Plan presented herein;

d. perform periodic lab inspections and audits;

e. manage annual certification of chemical and radiation fume hoods;

f. help project directors develop precautions and adequate facilities;

g. provide advice on current legal requirements concerning regulated substances;

h. promote the CHP and laboratory safety throughout the University; and

i. work within the Compliance Management System outlined in Section 2, Environmental Health & Safety, of this manual to correct unsafe laboratory conditions; to ensure that labs are in compliance with governmental regulations, the CHP, and any other University policies affecting labs; and to help establish policies that promote safe and healthful work conditions in all University labs.

B. Standard Operating Procedures

CHP procedures and relevant sections of this policies and procedures manual must be incorporated into the standard operating procedures for each laboratory at Tulane. Compliance must be a continuing effort and not a standby or short-term activity. These procedures must be followed in academic teaching laboratories as well as by full-time laboratory workers.

1. Purchasing, Receiving, Distributing Chemicals

a. Do not stockpile! When purchasing a hazardous chemical 1) order minimum quantities; 2) order only what is needed, when it is needed; 3) check with other labs to make certain the chemical is not already available; 4) substitute less hazardous chemicals whenever possible. Certain chemicals or regulated substances require prior approval; check with the Purchasing Department or OEHS for details.

b. Be prepared to receive the chemical. Before receiving a chemical, make certain that information concerning its hazardous properties, proper handling, storage, and disposal techniques is known to those who will be involved in handling and/or using the chemical. The supervisor/principal investigator must ensure that the facilities and equipment are adequate for the chemical that will be used, and that proper personal protective equipment (PPE) is available and in good condition. No container is to be accepted without an adequate identifying label and corresponding material safety data sheet (MSDS). MSDSs for all chemicals in the laboratory must be readily accessible to laboratory employees. (Note: Electronic versions of MSDSs are acceptable under certain conditions. See Section 12, Hazard Communication, of this manual.)

c. If possible, use a freight-only elevator when transporting chemicals from receiving or storage areas. Secondary containment such as an outside container or bucket should always be used for carrying bottled chemicals.
2. **Avoidance of "Routine" Exposure**

   a. **Minimize chemical exposure.** Because few chemicals are without hazards, general precautions for handling all laboratory chemicals must be adopted. Refrain from unnecessary exposure to chemicals by any route. Develop and encourage safe laboratory habits. Wear appropriate eye protection, gloves, and other personal protective equipment. Do not smell or taste chemicals. Substitute less hazardous chemicals whenever possible.

   b. **Avoid underestimation of risk.** For work with substances that present special hazards, special precautions must be taken. Rules for "select carcinogens," embryotoxins, and substances with a high degree of acute toxicity are outlined in [11] further in this section. Assume that any mixture will be more toxic than its most toxic component, and that all substances of unknown toxicity are toxic.

   c. **Provide adequate ventilation when using hazardous and toxic chemicals.** Use only those chemicals for which the quality of the ventilation system is appropriate. Vent apparatuses that may discharge toxic chemicals (vacuum pumps, distillation columns, etc.) into local exhaust devices. The best way to prevent exposure to airborne substances is to prevent their escape into the working atmosphere through the use of hoods and other ventilation devices. Confirm adequate hood performance before use.

   d. **Inspect protective equipment,** personal protective equipment, laboratory equipment, and containment devices before use.

   e. **Do not allow release of toxic substances** in cold rooms and warm rooms since these have contained recirculated atmospheres.

   f. **Observe exposure limits.** Observe and do not exceed the permissible exposure limits (PELs) and time weighted averages (TLVs) promulgated by OSHA and the American Conference of Governmental Industrial Hygienists.

   g. **Keep quantities small.** Keep the quantities of chemicals in the laboratory as small as practicable. Periodic (at least annual) inventories must be conducted by laboratory personnel. Chemicals no longer needed, and deteriorating items must be discarded.

3. **Inspections**

   Laboratories shall be inspected quarterly by the laboratory supervisor/principal investigator. *(See Section 13, Inspection and Compliance, of this manual)*

4. **Storage**

   a. Stairwells and hallways must not be used as storage areas. Access to exits, emergency equipment, and utility controls must never be blocked. Chemical storage in hoods shall be kept to a minimum and must not block vents or airflow. Chemical exposure to heat or direct sunlight must also be avoided. Chemicals must be segregated as to their hazard class with incompatible or reactive chemicals stored away from substances that could cause a reaction. Toxic substances should be stored in unbreakable secondary containers and their quantities kept to a minimum. Chemicals must not be stored on the floor. Avoid storing heavy or corrosive materials up high. Lips on shelves are strongly recommended when storing chemicals. Make certain that all containers are labeled, capped, and in good condition.
b. Follow NFPA 45 guidelines when storing flammable chemicals. *(See Section 26, Fire Safety; Section 29, Hazardous Materials Safety, of this manual; and III.F of this section.)* Note: In most laboratories at Tulane, no more than 2 gallons of flammable chemicals may be stored outside of a flammable liquid storage cabinet unless safety cans are used.

c. Do not store flammable liquids in a refrigerator unless the refrigerator is designed with a non-spark interior and is approved for storage of flammables. If refrigerated storage is needed inside a flammable storage room, an explosion-proof refrigerator/freezer is advised. In the event of a power failure, make prior alternate arrangements (emergency power, dry ice, CO₂ manifolds) to keep critical materials cold.

5. Signs and Labels

Prominent signs and labels shall be posted near the laboratory door listing hazards and emergency phone numbers including the name and phone number of the supervisor/principal investigator in charge of the lab. Contact OEHS for laboratory door signage. Locations of safety showers, eyewash stations, and other safety and first aid equipment inside the laboratory shall be prominently marked. Warnings shall be posted at areas where special or unusual hazards exist. In addition, identity labels showing contents of containers and associated hazards must be provided in accordance with the University's Hazard Communication Plan *(see Section 12, Hazard Communication, of this manual).* Peroxide forming chemicals such as ethers must be labeled with the date the container was opened and used up or disposed of within 6 months thereof.

6. Spills

*(See Section 29, Hazardous Materials Safety, of this manual.)*

7. Waste Disposal

*(See Section 29, Hazardous Materials Safety, of this manual.)*

8. Chemical Synthesis

a. When a chemical substance is developed in a laboratory exclusively for laboratory use and the composition of the substance is known, the laboratory supervisor/principal investigator shall determine if the substance is a hazardous chemical.

b. If the chemical is hazardous, the supervisor/principal investigator shall provide training as required in the CHP.

c. If the chemical produced is a by-product whose composition is not known, the supervisor/principal investigator shall assume that the substance is hazardous and shall follow the provisions of the CHP.

d. If the chemical substance is produced for another user outside of the laboratory, the supervisor/principal investigator shall comply with the Hazard Communication Standard including the requirements for preparation of MSDSs and labeling.
C. Exposure Monitoring

1. Regular instrumental monitoring is not usually justified or feasible in laboratories but may be appropriate when testing or redesigning hoods or other ventilation devices or when a highly toxic substance is stored or used regularly. Contact OEHS for advice in these situations.

2. For laboratory uses of OSHA regulated substances, employee exposures must not exceed the permissible exposure limits specified in OSHA 29 CFR 1910, subpart Z. OEHS shall measure an employee's exposure to any substance regulated by a standard that requires monitoring if there is reason to believe that exposure levels for that substance routinely (e.g., three times/week) exceed the action level, or in the absence of an action level, the PEL.

3. If the initial monitoring prescribed in C.2 above indicates employee exposure over the action level (or in the absence of an action level, the PEL), OEHS shall immediately comply with the exposure monitoring provisions of the relevant standard. OEHS shall work with Facilities Services as well as with laboratory workers to institute control measures (engineering controls, the use of personal protective equipment and hygiene practices, etc.) to reduce exposures, including a total shut-down of the operation, if deemed appropriate.

4. Monitoring may be terminated in accordance with the relevant standard.

5. OEHS shall notify an employee in writing of any monitoring results within 15 days after the receipt of the results. This may be done either by notifying the employee individually or by posting the results in an appropriate location that is accessible to all employees.

6. OEHS shall maintain an accurate record of any measurements taken to monitor exposures. These records shall be kept, transferred, and made available in accordance with OSHA 29 CFR 1910.20.

D. Ventilation, Fume Hoods, and Engineering Control Measures

1. All laboratories at Tulane shall be designed to include an appropriate general ventilation system with air intakes and exhausts located so as to avoid intake of contaminated air. Such systems shall provide a source of air for breathing and for input to local ventilation devices; it shall not be relied upon for protection from toxic substances released into the laboratory. Facilities Services shall ensure that laboratory air is continually replaced with at least 4-12 air changes/hour to prevent an increase of air concentrations of toxic substances, and that the general airflow is relatively uniform throughout the laboratory with no high velocity or static areas. Air shall flow from non-hazardous to hazardous areas and out to the exterior of the building.

2. Laboratories shall be equipped with laboratory hoods and sinks as dictated by the specific chemicals or hazards that will be used in that laboratory. Laboratory fume hoods with 2.5 linear feet of hood space per person shall be provided for every 2 workers if they spend most of their time working with toxic or volatile chemicals. Faucets in hoods and sinks with serrated tips must be equipped with vacuum breakers.

3. Other safety equipment such as eyewash stations and safety showers shall be readily available where corrosive and/or hazardous chemicals are used. Laboratory personnel must inspect eyewash stations weekly; Facilities Services must test safety showers routinely (at least annually). Dated inspection records shall be kept on these items.
4. Fume hoods must have a continuous monitoring device (airflow alarm or indicator) to allow convenient confirmation of adequate hood performance before use. If this is not possible, work with toxic substances or substances of unknown toxicity must be avoided, or other types of local ventilation devices must be provided. Units must ensure that either Facilities Services or an outside contractor contracted by Facilities Services checks the proper functioning of continuous monitoring devices at least annually. (A unit is a department, section, center, or program, or any number or configuration of these components.)

(Note: Vaneometers were purchased and installed for existing Tulane hoods at the time the OSHA Laboratory Standard was finalized (1990-1991). Although these devices do not give an audible alarm, they do indicate airflow exhaust. As long as the vaneometers are maintained in good condition in the existing fume hood, it has been determined that they will be acceptable at Tulane, at least in the interim period until such time as units/users decide to purchase electronic alarms. Electronic monitoring devices, however, are preferred and encouraged, and all fume hoods now purchased must have an electronic airflow/air pressure warning device.)

5. Airflow into and within the hood must not be excessively turbulent. Hood face velocity must be adequate (typically 80-120 fpm for chemical fume hoods, 125 fpm for radiation fume hoods at full sash). **OEHS shall provide annual face velocity certification of all chemical and radiation fume hoods as well as certification of biological safety cabinets (BSC) and should be contacted if there is a problem with a particular hood.** If a hood's airflow or a biological safety cabinet’s performance is deemed inadequate, the hood/BSC shall be appropriately labeled with a warning sign until such time as modifications and repairs have been made and efficiency determined. Work with toxic substances or substances of unknown toxicity must be avoided, or other types of local ventilation must be used until the hood is repaired.

6. Cold rooms and warm rooms shall have provisions for rapid escape in the event of electrical failure.

7. Alteration(s) of the ventilation system shall be made only if thorough testing indicates that worker protection from airborne toxic substances shall continue to be adequate. (Note: This may require interim use of respiratory protection or temporary suspension of certain operations/experiments.) Laboratory workers must be warned by Facilities Services whenever work is being performed on the ventilation system, and proper shutdown notices must be posted.

8. The quality and quantity of ventilation must be evaluated by Facilities Services upon installation, regularly monitored, and reevaluated whenever change in local ventilation devices is made.

9. The laboratory supervisor/principal investigator shall make certain that the work conducted in the laboratory is appropriate to the physical facility and to the quality of the ventilation.

**E. Personal Protective Equipment**

1. Personal protective equipment for each laboratory shall include apparel compatible with the required degree of protection for the substances being handled, an easily accessible drench-type safety shower, an eyewash station, a fire extinguisher, respiratory protection (where appropriate), a fire alarm, a telephone for emergency use, and other items designated by the supervisor/principal investigator of the laboratory.
2. Under no circumstances shall an unprotected person be knowingly subjected to hazardous environmental conditions above the PELs established by OSHA.

3. Where the use of respirators is necessary to maintain exposure below permissible exposure limits, proper respiratory equipment shall be provided at no cost to the employee. Respirators shall be selected, used, and maintained in accordance with requirements of OSHA 29 CFR 1910.134 and the University’s respiratory protection policies.

4. It shall be the supervisor/principal investigator's responsibility to ensure that all protective apparel is appropriate for the task to be performed and that the equipment is in good condition. Gloves that are peeling, cracked, or discolored, or that have punctures, tears, or other evidence of deterioration shall not be used. The type of glove selected shall be compatible with the type of chemical used. All personal protective equipment must be inspected regularly (every 3-6 months) by the supervisor/principal investigator of the laboratory. The supervisor/principal investigator must develop procedures to prevent the use of out-of-service equipment. Personal protective equipment must be properly stored as per OSHA requirements.

- See Section 14. Personal Protective Equipment, of this manual.

F. Employee Information and Training Program

Supervisors/principal investigators are responsible for ensuring that all employees working with or potentially exposed to hazardous chemicals are appropriately informed and trained. Training shall include proper procedures and precautions to follow when using or during exposure to hazardous chemicals. Training must be documented.

1. Employees shall be informed of the a) contents of the OSHA Laboratory Standard and its appendices; b) the location and availability of the University’s Chemical Hygiene Plan; c) the hazardous nature (physical and health hazards) of chemicals in the work area; d) permissible exposure limits for OSHA regulated substances or recommended exposure limits for other hazardous chemicals where there is no applicable OSHA standard; e) signs and symptoms associated with exposure to hazardous chemicals used in the lab; f) the location and availability of reference material regarding the hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory including, but not limited to, MSDSs received from the chemical supplier; and g) the location of available personal protective apparel and equipment.

2. Employees shall be trained in a) methods and observations used to detect the presence of release of hazardous chemicals in the work area; b) measures employees can take to protect themselves from such hazards, including specific procedures the University has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment; c) the use of personal protective apparel and equipment; and d) the applicable details of the CHP.

3. OEHS offers training to all laboratory supervisors/principal investigators, directors, and unit heads in OSHA prescribed subjects. Such personnel shall then be responsible for training their employees in the use of potentially hazardous and toxic materials. The training curriculum for supervisors/principal investigators, directors, and unit heads shall consist of on-the-job instruction designed to be work-area specific, and to ensure that all individuals at risk are adequately informed, are aware of risks, and know what to do if an accident occurs.
4. OEHS has prepared a Laboratory Standard training curriculum outline for use by supervisory personnel. The training curriculum outline shall be issued at supervisor/principal investigator training sessions.

5. All laboratory employees are required to go through the Laboratory Standard training curriculum.

6. Introductory training shall be given to all new employees during orientation. Complete information and training shall be provided by the supervisor/principal investigator at the time of an employee's initial assignment working with hazardous or toxic chemicals, or whenever a new hazardous chemical or exposure situation is introduced into the work area. The initial training shall be completed as expeditiously as possible. Periodic updates and reinforcement shall be provided by supervisors/principal investigators and at safety meetings, as appropriate.

7. Before any “non-routine” task is performed that could involve exposure to hazardous or toxic chemicals, the supervisor/principal investigator shall review all potential hazards with employee(s) and shall prescribe appropriate work practice procedures. OEHS shall assist if requested.

- See Section 12, Hazard Communication, and Section 3, Employee Safety Training, of this manual.

G. Prior Approval for Use of High Risk Substances

For any experiment, research proposal, or sponsored project requiring use of high risk substances such as explosives, select carcinogens, reproductive toxins, or substances having a high degree of acute toxicity, the supervisor/principal investigator of the laboratory must provide a protocol sheet to OEHS describing the project and all operating procedures to be used. OEHS shall review the protocol sheet and, if deemed necessary, distribute the information for review and comment to members of the University Health & Safety Operations Committee (Operations Committee). OEHS shall correspond with the researcher and the Operations Committee so that all safety questions and concerns may be addressed.

H. Medical Consultations, Examinations, Surveillance

1. An employee has a right to medical consultation whenever an event occurs in the work area such as a spill, leak, explosion or other occurrence resulting in possible hazardous exposure. If the consultation indicates a need for a medical examination, the employee has a right to seek such examination.

2. An employee has a right to a medical examination whenever he/she develops signs or symptoms associated with exposure to a hazardous chemical.

3. Medical surveillance of affected employees shall be instituted where exposure monitoring reveals an exposure level routinely (e.g., 3 times/week) above the action level (or in the absence of an action level, the PEL) for an OSHA-regulated substance requiring monitoring/surveillance. Medical surveillance shall be prescribed by the appropriate OSHA standard. Any medical records generated shall be retained, transferred and/or made available in accordance with requirements of OSHA 29 CFR 1910.20 and other federal and state regulations.
4. Any medical consultation or examination required as indicated in H.1, 2 and 3 above, shall be performed by or under the supervision of a licensed physician and shall be provided without expense to the employee, without loss of pay, and shall be conducted within a reasonable time of the awareness of signs or symptoms (H.2 above), the occurrence of the hazardous event (H.1 above), or within a reasonable time of receiving monitoring results (H.3 above).

5. Because the reasons requiring consultation or examination as indicated in H.1-3 above are considered “occupational” injury or illness, policies and procedures outlined in Section 4, Injury/Illness Reporting, of this manual must be followed.

6. When medical consultations and/or examinations are required in the instances outlined in H.1-2 above, the attending physician shall be provided with a) the identify of the hazardous chemical(s) to which the employee may have been exposed; b) a description of the conditions under which exposure occurred (including quantitative exposure data, if available); and c) a description of the signs and symptoms of exposure, if any, that employee is experiencing. If requested, the physician should also be provided with an MSDS for the chemical(s).

7. The written opinion generated as a result of medical consultation or examination as discussed in H.1-6 above, shall be forwarded to the University’s Office of Risk Management, with a copy to OUHS. The physician’s written opinion shall not reveal specific findings of diagnoses unrelated to occupational exposure unless the physician discovers a condition that would place the employee at increased risk as a result of hazardous chemical exposure in the workplace.

The written opinions shall include: a) the results of the medical consultation/examination and any associated tests; b) any medical condition revealed that may place the employee at increased risk as a result of hazardous chemical exposure in the workplace; c) any recommendation for further medical follow-up; d) a statement that the physician has informed the employee of the results of the examination or consultation and of any medical condition that may require further examination or treatment. Any medical records generated shall be retained, transferred and/or made available in accordance with requirements of OSHA 29 CFR 1910.20 and other federal and state regulations.

I. Work with Select Carcinogens, Reproductive Toxins, and Substances with a High Degree of Acute Toxicity

1. Supervisor/principal investigators must ensure that an accurate inventory and usage record of high-risk substances used in the work area be maintained and kept current. The record must include a) the amount of material on hand, b) amount and date of usage, and c) names of workers involved.

2. In addition to inventory and usage records, supervisors/principal investigators must prepare standard operating procedures (SOP) that include an emergency plan for handling high-risk chemicals. The SOP should be added to the written Chemical Hygiene Plan as an addendum, and together shall constitute the “specific” CHP for that laboratory. A lab’s SOP must be reviewed and updated annually with a copy sent to OEHS. In the event of an emergency such as a spill or leak outside of a hood, OEHS must be contacted immediately. The area shall be evacuated until cleanup and decontamination by trained personnel wearing appropriate protective equipment is complete.

3. A designated area must be established for work with select carcinogens, reproductive toxins, or substances with a high degree of acute toxicity. This may be the entire laboratory, an area of...
the laboratory, or a device such as a laboratory hood. The designated area must be conspicuously marked with restricted access and special warning signs stating the hazard. All people with access to the area must be aware of the substances being used and the necessary precautions.

4. Use of containment devices such as fume hoods or glove boxes is highly recommended when working with select carcinogens, reproductive toxins, and substances with a high degree of acute toxicity. Confirm adequate performance of such devices before use. Released vapors and aerosols should be trapped to prevent their discharge with the hood exhaust.

5. Avoid skin contact by use of gloves and long sleeves, and other protective apparel as appropriate. Remove protective apparel upon exiting the designated area. Always wash hands and arms immediately after working with any of these materials.

6. High risk substances must be properly labeled and stored in an adequately ventilated area in an unbreakable secondary container such as a chemically resistant tray capable of containing the contents of the primary container should it break. Work and storage surfaces should be recovered with removable, absorbent, plastic backed paper for ease in decontamination and cleanup.

7. A wide variety of substances known as “allergens” can produce skin and lung hypersensitivity. Examples include diazom ethane, chromium, nickel, isocyanates, bichromates and certain phenols. Because of the variety of substances and the varying responses of individuals, suitable gloves must be used whenever hand contact with allergens or substances of unknown allergic activity is probable. Wash hands and exposed areas of skin thoroughly after use.

8. **Women of childbearing age** who handle embryotoxins (examples: org anomercurials, lead compounds, formamide) must use appropriate protective apparel (especially gloves) to prevent skin contact, and only in a hood whose satisfactory performance has been confirmed. Review each use of these materials with the supervisor/principal investigator and review continuing uses annually or whenever a procedural change is made. OEHS must be notified of all incidents of exposure or spills requiring special control.

9. **When working with chemicals of moderate chronic or high acute toxicity** (examples: hydrogen cyanide, hydrogen sulfide, nitrogen dioxide, vinyl chloride, disisopropylfluorophosphate, hydrofluoric acid), exposure by any route must be minimized by taking all reasonable precautions. At least two people must be present at all times when working with these materials. A hood or other containment device must always be used especially for procedures involving volatile toxic substances or aerosol generation and suitable protective apparel including gloves and long sleeves must be worn. Wash hands and arms immediately after use.

If a major spill occurs outside the hood, the area must be evacuated and OEHS contacted immediately for cleanup procedures. Volatile toxic substances must never be disposed of by evaporation in the hood, but shall be chemically decontaminated, if possible, by chemical conversion. If this is not feasible, waste materials must be stored in closed, impervious, properly labeled containers so that personnel handling the containers will not be exposed to the contents. Contact OEHS for waste disposal collection procedures.

10. **When working with chemicals of high chronic toxicity** (examples: dimethylmercury and nickel carbonyl, benzo-a-pyrene, N-nitrosodiethylamine, 3-methylcholanthrene, dimethylcarbamoyl chloride, hexamethylphosphoramide, bis (chloromethyl) ether, or other “select carcinogens”)), all of the procedures and precautions described in 9 above must be followed. In addition, the
supervisor/principal investigator of the laboratory must review each worker's plans for an experiment(s) to ensure that toxic material is effectively contained during the experiment and that wastes are disposed in a safe manner.

Storage areas for substances in this category must have limited access and must be maintained under negative pressure with respect to surrounding areas. When a negative pressure glove box is used, the ventilation rate must be at least 2 volume changes/hour, the pressure at least 0.5 inches of water lower than the external environment, and exit gases must be passed through a trap or HEPA filter. For a positive pressure glove box, thoroughly check for leaks before use and again pass exit gases through a trap or HEPA filter.

Vacuum pumps must be protected against contamination by scrubbers or HEPA filters and must be provided with guards for the pulley assemblies. All equipment including glassware must be decontaminated before removing from the designated area, and the designated area must be thoroughly decontaminated before normal work is resumed there.

11. **Whendoing animal work with chemicals of high chronic toxicity**, whenever possible administer the substance by injection or gavage instead of in the diet. If administration is in the diet, use a caging system under negative pressure or under laminar air flow directed toward HEPA filters. Minimize formation and dispersal of aerosols including those from food, urine and feces by using HEPA filtered vacuum equipment when cleaning, moistening contaminated bedding before removal from the cage, and mixing diets in closed containers in a hood. Wear suitable protective clothing and dispose of wastes properly.

### II. Compliance

#### A. Role of Departmental Safety Representatives

Departmental Safety Representatives (DSRs) help to ensure that the units they represent that include laboratories are in compliance with the OSHA Laboratory Standard, the Chemical Hygiene Plan presented in this section, and any other applicable University policies and procedures. DSRs also collect and submit to OEH S any required training documentation, PPE assessments, chemical inventories, or other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.
If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee for consultation.

- See Section 2, Environmental Health & Safety, of this manual for information on the Compliance Management System.

B. Compliance Requirements for Grant Proposal Certification

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biosafety.

III. General Laboratory Safety

A. General Laboratory Safety Practices

1. Make every effort to determine hazardous properties (i.e., flammability, reactivity, toxicity, and corrosiveness) before using or handling any chemical or biological agent. In addition, if published data exists, determine the mutagenic, carcinogenic, and teratogenic potential. Minimize all chemical exposures. MSDSs must be readily available for the chemicals or hazardous materials used in the laboratory (see Section 12, Hazard Communication, of this manual).

2. Chemicals must be appropriately labeled with the name of the chemical and its associated hazards. Incoming chemicals must also list the name and address of the chemical manufacturer, importer, or other responsible party. Read labels and observe precautions.

3. Avoid conducting hazardous experiments while alone in a laboratory, or at least without another
person within the general area. For unattended operations, provide for containment of toxic substances in the event of an emergency.

4. Use safety screens and shields whenever there is potential for explosion or apparatus implosion.

5. Wash hands frequently and vigorously with soap and hot water during the day and before leaving the laboratory. Wash your hands before eating or smoking.

6. Do not eat, drink or smoke in a laboratory. Never prepare, store, or consume food or beverages in a laboratory. Do not store food and beverages in refrigerators used for storage of biological agents, hazardous chemicals, or radioactive materials.

7. Never mouth-pipette to fill pipettes or to start siphons in any laboratory. Incidents involving mouth pipetting have resulted in ingestion of biological agents, chemicals, and residual contamination from unknown sources. Suction bulbs or other mechanical devices must be used.

8. Keep all supplies of syringes and needles in a secured location to prevent theft or accidental injury.

9. Do not obstruct exits and aisles in any manner. Equipment, chairs, supplies or trash are not permitted in exit routes. Exit doors must not be blocked, bolted, or obstructed so as to block or impede egress. Also, do not block emergency equipment such as fire extinguishers or safety showers.

10. **Protective Clothing**

    a. Wear clothing that protects as much of the body as possible. The type of protective clothing (laboratory coats, smocks, aprons, fluid resistant gowns, etc.) worn in the lab should depend on the nature of the laboratory work. Do not wear clothing that has a high percentage of acetate, which is highly flammable. Sandals, shorts, etc., are inappropriate for most laboratory work. Confine long hair.

    b. **There are three options for wearing lab coats:** 1) wear the coat in the lab over regular clothing and remove the coat before leaving the lab; 2) wear regular clothing in the lab and then put the lab coat over regular clothing when leaving the lab; 3) **keep two lab coats--wear one in the lab and one outside the lab.** This third option is recommended. If option one is selected, the lab worker must remember to remove the coat before leaving the lab (the coat must not be worn in areas where food is consumed). The intent of this policy is to reduce the spread of microorganisms and other contaminants from the laboratory to other areas. Contaminated laboratory coats must not be brought home for laundering but should be sent to a commercial laundry service.

    c. Check **gloves** to make sure they are in good condition. Remove gloves and wash your hands before leaving the work area or handling such things as door knobs, writing instruments, telephones, etc. Make sure the glove permeability is suitable for the chemical to be used. Closed toe **shoes** (no sandals or perforated shoes) are required for laboratory work.

    d. All persons engaged in, supervising, or observing activities involving potential hazards to the eye are required to wear eye protection. For most laboratory work, safety glasses or goggles are adequate. Face shields and/or goggles must be worn where there is danger of splashing chemicals. According to the American Chemical Society, contact lenses can be
worn in the lab if proper eye protection is also worn.

- See I.E. Personal Protective Equipment, above, and Section 14 Personal Protective Equipment, of this manual.

11. Signage

   a. Warning signs must be posted in designated areas indicating type of hazard and precautions to be taken. General laboratory signage examples include the following:

   DO NOT STORE FLAMMABLES IN THIS REFRIGERATOR
   WEAR PROTECTIVE EQUIPMENT
   NO SMOKING

   b. Laboratory door signs are used to indicate hazards in the laboratory including corrosives, flammables, carcinogenic materials, oxidizers, explosives, etc. Signs must include 1) emergency phone numbers of laboratory personnel, 2) wording indicating that authorized personnel only are allowed in the laboratory, and 3) a list of special procedures and information. Contact OEHS if laboratory door signage is needed.

   c. Biohazard signs must be posted on the entrance to an area containing biohazards as well as on refrigerators/freezers and equipment that may contain these materials.

   d. Radiation signs must be posted on the entrance to work areas and on storage cabinets, refrigerators, and work counters where radioactive materials are used.

   - See I.B.5. Signs and Labels, above, and Section 12 Hazard Communication, of this manual.)

B. Housekeeping and Disposal Procedures

   1. Cleaning of areas where toxic materials are handled, used or stored is the responsibility of those who use the area, and any cleaning by custodial personnel must be done only if the custodial personnel are trained and supervised by technical or professional staff. Proper protective equipment, e.g., gloves, safety glasses, etc., must be worn during cleaning.

   2. Keep work areas clean and uncluttered. Make certain that chemicals and equipment are properly labeled and stored.

   3. Clean the work area at the completion of an operation or at the end of each day. Thoroughly decontaminate fume hoods, counter tops, equipment, etc., after use.

   4. Never store chemicals on the floor.

   5. Keep floors and aisles free of obstructions and slipping hazards such as spilled materials, ice, glass beads or rods, etc.

   6. Avoid accumulating equipment and glassware in the sinks and cleanup area.

   - See Section 29 Hazardous Materials Safety, for hazardous waste disposal.
C. Equipment

1. Lighting

At least 50 foot candles of light at every working surface must be provided for laboratory work.

2. Ovens


   b. Laboratory ovens must be constructed such that their heating elements and their temperature controls are physically separated from their interior atmospheres. They should be vented directly to an exhaust system whenever possible.

   c. If an oven is to be used to dry materials that may liberate flammable vapors when heated, the oven must be designed for such purpose.

   d. Glassware that has been rinsed with an organic solvent must be rinsed again with distilled water before drying in an oven.

   e. If a mercury thermometer should break in an oven, turn the oven off immediately and wait for it to cool. Remove the mercury from the cold oven following appropriate mercury spill cleanup procedures. Heat the oven in a fume hood until mercury vapor concentration drops below the threshold limit value. Contact OEHS if monitoring is needed.

   f. Exercise caution in using microwave ovens. Microwave ovens can cause superheating of liquids, can result in arcing if metal is used, and can result in fire or explosion if a flammable solvent is present. Capping of vials and other containers used in a microwave oven can result in explosion from pressure buildup in a vial. Inappropriate plastic containers may melt.

3. Other Heating Devices

   a. The heating element in any laboratory heating device (hot plates, oil baths, air baths, heat guns, etc.) should be completely enclosed in a glass, ceramic, or insulated metal case to minimize the risk of electric shock and of producing an electric spark. If the heating element or wires are exposed, the device must be discarded or repaired.

   b. Heating devices shall be used with a variable autotransformer to control the input voltage.

   c. Locate variable autotransformers where water and other chemicals cannot be spilled or splashed onto their surfaces and where their movable contacts will not be exposed to flammable liquids or vapors.

   d. Whenever using heating devices in the laboratory, use a fail-safe device such as a temperature controller or a temperature-sensing device that will turn off the electric power if the temperature of the heating device exceeds some preset limit.
e. Do not use Bunsen burners in the vicinity of flammable gases or liquids. Whenever possible, use electrical heaters or steam in place of gas burners.

f. If a hot plate is used, ensure that the temperature is less than the auto-ignition temperature of the chemicals likely to be released and that the temperature control device does not spark.

4. Vacuum Pumps

Belt-driven mechanical pumps with exposed belts must have protective guards.

5. Water-Cooled Equipment

Use hose clamps and plastic locking disconnects to prevent hoses from popping off of a condenser and creating a flying hazard. Make certain that the cooling system is being maintained; that hoses have not deteriorated. Do not block sink drains.

6. Refrigerators/Freezers

a. Never use a laboratory refrigerator to store food or beverages for human consumption.

b. Laboratory refrigerators should be placed against a fire-resistant wall, should have heavy-duty cords, and should be protected on their own circuit breaker.

c. Use unbreakable secondary containers for storage inside of a refrigerator.

d. Keep the storage of potentially explosive or highly toxic substances in a refrigerator to a minimum.

e. Use only UL or FM approved non-sparking refrigerators designed for flammable storage. If this is not possible, make certain that the refrigerator's interior light and switch (mounted on the door frame) have been removed, and that the thermostat controlling the fan and temperature is located outside the refrigerated compartment. Such modifications must be approved by OEHS.

f. Make certain that all containers of chemicals are labeled and capped. Use of aluminum foil, corks, and glass stoppers inside a refrigerator is discouraged. Ensure that chemicals stored in the same refrigerator are compatible.

g. Label refrigerators as to their hazard (biohazard signs, radiation signs, hazardous chemicals, "no food storage" signs, etc.).

7. Glassware/Sharps

a. Discard broken or chipped glassware and replace with new glassware. All waste glassware and sharps must be stored and disposed of in rigid, puncture resistant containers labeled as sharps and glassware. If the glassware or sharps are contaminated, they must be collected and placed in labeled "biohazard" rigid, puncture-resistant containers to be sterilized or disposed of following procedures for disposal of hazardous materials.
b. Use hand protection when picking up broken glass. Sweep small pieces into a dustpan or use tongs.

c. Only glassware designed for vacuum work should be used for such purpose. Shield or wrap Dewar flasks and other evacuated glass apparatuses should implosion occur.

d. Prevent spills by removing pipettes from unattended bottles, flasks or beakers.

e. Do not attempt to remove rubber stoppers or rubber tubing on glassware by force. If stuck, cut the stopper or tubing off.

f. Contaminated glassware must be properly cleaned and decontaminated before reuse.

g. Hot glass-heated containers must be handled with protective non-asbestos gloves so as to avoid burns.

8. **Centrifuges**

a. Only trained personnel should operate a centrifuge and must follow the manufacturer’s instructions.

b. Do not operate centrifuges unless the covers are closed. Keep hair, beards, neckties, hair ribbons or other frilly or dangling items out of the way.

c. Make certain the load is balanced each time the centrifuge is used.

d. Do not centrifuge uncovered tubes of specimens (blood, urine, sputum). Centrifugation creates a vacuum and volatilizes liquids into vapors and aerosols. Use caps or parafilm.

e. Do not centrifuge flammable or combustible liquids.

f. Do not leave the tops of centrifuges in the open position.

9. **Autoclaves**

a. Do not operate autoclaves until trained in their proper operation.

b. Make certain all supply system valves are in the OFF position before opening. Do not open the autoclave door until both temperature and pressure are back to normal as indicated by the gauges.

c. Use non-asbestos protective gloves when putting items into or removing items from the autoclave. The sides and door may be hot in addition to the material being autoclaved. Note: Beware of steam which will permeate gloves.

d. To prevent explosion, implosion, or boil over, loosen container caps to allow equalization of pressures inside containers.

e. Cellulose nitrate tubes may explode and therefore must not be autoclaved.
f. Biological indicators must be used to verify sterility of materials autoclaved.

10. Electrophoresis Equipment Maintenance

   Contact OEHS for information.

11. Emergency Showers and Eyewash Stations

   a. All laboratories and areas where faculty, staff, students, or visitors are exposed to corrosive or irritating chemicals must be provided with safety showers and eyewash stations that are conveniently located (see 11.g below), readily accessible, operable, and tested regularly. Showers and eyewash stations must be clearly labeled, remain unobstructed, and their location made known to all employees.

   b. The valve handle of safety showers and eyewash stations must be rigidly fixed and plainly labeled. The valve must open readily and remain open until intentionally closed. Water flow pressure must be sufficient to drench the subject rapidly, or gently flow in the case of eyewash stations. The shower and eyewash station area must be kept clear of obstructions. Water must be of drinking purity when used in safety showers and eyewash stations.

   c. Emergency eyewash stations must deliver a gentle flow of clean, aerated water. A hand-held drench hose must not be used as a replacement for an emergency eyewash or shower. Eyewash stations must not be located where they can be contaminated by hazardous materials.

   d. **For chemical splashes to the eye**, a very complete irrigation is indicated (a 15-minute flush is recommended). Immediately flush the eye with copious amounts of water under gentle pressure, checking for and removing contact lenses at once. Force the eye open and move it from side to side to wash thoroughly. In the absence of an eyewash station, the injured person must be placed on his/her back and water gently poured into the eye while it is held open. The injured person must be given prompt medical attention regardless of the severity of the injury. Cover the eye with clean, wet, cold pads while transporting the injured person to a medical facility.

   e. Neutralizing agents must not be used for chemical burns to the eye. Experiments have indicated that this type of treatment is likely to increase the eye damage. (One exception is that if hydrofluoric acid gets into the eye, calcium gluconate can be used in addition to washing the eyes with water.)

   f. The emergency shower and eyewash stations must be tested on a regular basis, and arecord kept of such tests. The tests must concern the operation of the unit to determine sufficient water flow and valve operation. Observe physical condition of unit and be sure unit is kept clear of obstructions. **Facilities Services must test emergency showers at least once a year. Eyewash stations should be flushed weekly by laboratory personnel.**

   g. Eyewash stations must be within the immediate work area where caustics or irritating chemicals (such as formaldehyde) are used. Safety showers can be placed in hallways not more than 10 seconds from the location where the hazardous material is used. Bottled solutions for eye washing are not approved since at least 15 minutes of continuous flushing is needed for the eyes or other affected body areas.
D. Standards for Handling Compressed Gases in Cylinders

1. Governing Requirements

For OSHA compliance, the handling, storage, and utilization of all compressed gases in cylinders on Tulane campuses shall be in accord with provisions of all Compressed Gas Association Standards, as set forth in Pamphlet P-1(1965) Safe Handling of Compressed Gases and P-2, Safe Handling of Medical Gases. 1984 revised P-1 pamphlets can be obtained from the Compressed Gas Association, 1235 Jefferson Davis Hwy, Arlington, VA 22202.

2. General Safety Notes

   a. Cylinders of compressed gas must be properly and securely supported (chain, strap, stand) at all times. They must never be dropped or permitted to strike each other violently.

   b. Cylinders must be transferred only by carts or hand trucks. Valve safety covers must be in place and the cylinders secured to the carts in which they are being transported. They must not be rolled or dragged, used as rollers, supports, or for any purpose other than to contain the contents as received.

   c. The valve safety covers must be left on the cylinders until they are placed in service and must be secured to walls, benches, or stable pieces of equipment until non-tip bases and regulators are attached.

   d. Empty cylinders must be marked "empty" or "MT" with grease pencils or tagged. Empty cylinders must not be restored with full cylinders. Some cylinders have tags identifying their contents; tearing off the bottom half of this indicates an empty cylinder.

   e. Employees must not attempt to repair cylinders or cylinder valves or force stuck or frozen cylinder valves.

   f. Cylinders delivered for use at Tulane shall bear the proper Department of Transportation label for the compressed gas container and a legible label or stencil identifying the contents. Care shall be taken to prevent the defacing or removal of any markings, labels, decals, tags, and stencil marks used for identification of contents by the supplier. Cylinders must not be accepted from a vendor unless the valve safety covers are in place and properly tightened. If a visual inspection indicates that a cylinder is obviously damaged, it must be immediately returned to the vendor without attempting usage.

   g. If a cylinder leaks (other than normal venting if provided for) and the leak cannot be remedied by simply tightening a valve gland or packing nut, the valve must be closed and a tag attached stating that the cylinder is unserviceable. The leaking cylinder must then be removed to the outdoors, at a well-ventilated location. Contact the supplier for instructions as to the return of the cylinder.

   h. Treads and points of unions must be clean; such surfaces must be inspected before they are connected.
i. Only pressure regulators and needle valves approved for specified gases may be used. When attaching regulators or needle valves, the connections must be tightened firmly. Non-adjustable wrenches of the proper size must be used. Pliers or adjustable wrenches must not be used, as they damage the nuts, most of which are brass and rather soft. Need for excessive force often indicates that the regulators or needle valves do not fit the cylinders. Leaks at the unions between the regulators and the cylinder valves are usually due to damage to the faces of the connections. Attempts to force a tight fit may damage the previously undamaged half of the connection. If the cylinder valve faces are damaged, the cylinders shall be returned to the vendors. Employees shall not attempt to repair them. Damaged regulators shall not be used until repaired.

j. Pressure in full cylinders must be indicated on the cylinder or labels. Lack of full pressure may indicate leaks at the connections between the cylinder and regulators or incompletely filled cylinders.

k. If the gases are not to be used over a period of time, the cylinder valves must be closed, the lines bled, and the pressure adjusting screws turned back until they turn freely. Damage to the gauges can occur during extended periods of non-use.

l. Cylinders must not be placed in a position where they might become part of an electric circuit. When used in conjunction with electric welding, precautions must be taken against accidentally grounding cylinders, permitting them to be burned by an electric welding arc.

m. Cylinders must not be subjected to temperatures above 125°F, nor must a flame ever be permitted to come in contact with any part of a compressed gas cylinder.

3. Special Precautions

a. Flammable Gases. Cylinders containing flammable gases are not to be stored near flammable solvents, combustible waste material, and similar substances, or near unprotected electrical connections or other sources of ignition. Reserve stocks of cylinders containing flammable gases are not to be stored with cylinders containing oxygen.

b. Oxygen and Oxidizing Gases. Stored oxygen cylinders must be kept separated from stored fuel or any other flammable cylinders or combustible materials (especially oil or grease) by a minimum distance of 20 feet or by a non-combustible barrier, with a one-half hour fire resistance rating, at least 5 feet high. A sheet metal partition is not an acceptable method of separating cylinders.

c. Acid and Alkali Gases. Goggles or face shields, chemically resistant gloves, and aprons shall be worn in addition to long sleeved shirts, trousers and closed toe shoes. Following is a partial listing of acid and alkaline gases: ammonia, hydrogen chloride, boron trifluoride, hydrogen sulfide, chlorine, methylamine, dimethylamine, nitrosyl chloride, ethylamine, sulfur dioxide, fluorine, trimethylamine, hydrogen bromide.

d. Highly Toxic Gases. Personnel handling and using highly toxic gases shall have available for immediate use gas masks or a self-contained breathing apparatus of a design approved by NIOSH/MSHA for the particular hazard involved. Such equipment must be located convenient to the work place, but shall be kept out of the area most likely to be contaminated.
e. **Cryogenic Gases.** Cylinders containing pressurized liquid oxygen, nitrogen, hydrogen, etc. must be transported, stored, and used in an upright position. The extreme low temperature of the contents necessitates an upright position of the cylinders to permit venting of vapors and the maintenance of safe internal pressures. The instructions of the supplier with regard to handling and use of these cylinders must be followed. When handling liquid gases, eye protection, including a face shield, and thermal-insulated gloves must be worn to protect against frostbite burns and injuries.

f. **Inert Gases.** Inert gases are simple asphyxiants that can displace the oxygen content in air. Rooms where inert gases are used or stored must be well-ventilated. Self-contained breathing apparatuses or airline respirators must be worn in areas containing less than 19% oxygen concentration by volume. Inert gases include helium, krypton, neon, nitrogen and xenon.

E. **Electrical Safety**

1. All instruments used in the laboratory must be grounded including household type appliances, unless they are of the double insulation type.

2. All shocks must be reported immediately including small tinges. Small shocks often precede major shocks and a light tingle may indicate potential trouble.

3. Shut off the current and/or unplug the instrument if a shock (or tingle) occurs. Do not attempt to use an instrument that is causing shocks; not only is it potentially dangerous to do so, but any results from the instrument would be suspect.

4. Do not attempt to repair any instrument while it is plugged in.

5. Repairs to the electrical system of a building are prohibited except by trained personnel. Any work on switches, outlets or circuit boxes (fuses, circuitbreakers) must be handled by Facilities Services or qualified persons approved by Facilities Services.

6. Gang plugs are prohibited. Extension cords may only be used for temporary purposes such as audio/visual equipment or power tools. Do not use "cheaters" in electrical receptacles that are not grounded.

F. **Classification, Handling, and Storage of Chemicals**

1. **Classification of Chemicals**

   Dangerous chemicals may be grouped into the following categories:

   **Ignitible or flammable:** Materials that easily ignite, burn, and serve as fuel for a fire.

   **Corrosive or caustic:** Acids and alkalis that may cause burns of the skin, mouth, or eyes, and may also cause damage to equipment and storage areas.
**Reactive:** Materials that react violently with air or water, or which may explode under special circumstances.

**Toxic or poisonous:** Materials that can have acute or chronic effects on human health or the environment even if relatively small amounts are inhaled, ingested, or come in contact with the skin.

2. **Storage and Handling of Flammables and Combustibles**

   a. **Flammables**

   1) Work with flammable liquids must be performed in a well ventilated area, preferably under a fume hood, away from heat and ignition sources (e.g., open flames, heating elements, and sparks from motors, light switches, friction and static).

   2) Smoking is not permitted near flammable liquids.

   3) Do not use flammable liquids in the presence of ignition sources. Conversely, keep ignition sources away from areas where flammable liquids are used and/or stored.

   4) Flammable liquids give off vapors that may also burn or explode. Be sure flammable liquids are properly stored: a) Quantities over one gallon must be stored in a maximum size two gallon safety can. If a reagent must be stored in glass for purity, the glass container may be placed in a bottle carrier to lessen the danger of breakage. b) Small quantities (working amounts) may be stored on open shelves, but bulk storage (more than 10 gallons) must be stored in a flammable liquid storage cabinet or room. c) Small quantities "in use" must be stored in closed containers in well ventilated areas. d) Only approved refrigerators may be used to store flammable liquids. Never store flammable liquids in an ordinary refrigerator.

   5) Use the smallest containers of flammable solvents compatible with the work. Keep only a minimum supply on hand.

   6) Use flammable liquids only in cold rooms designed, approved, and labeled for that purpose.

   ● See, table next page titled *Maximum Quantities of Flammable and Combustible Liquids in Laboratory Units Outside of Flammable Liquid Storage Rooms.*

b. **Combustibles**

   1) Combustible liquids while not in the same hazard class as flammable substances are dangerous and must be stored, handled, and disposed in much the same manner as flammable liquids.

   2) Smoking is not permitted near combustible liquids.
### Maximum Quantities of Flammable and Combustible Liquids in Laboratory Units Outside of Flammable Liquid Storage Rooms

<table>
<thead>
<tr>
<th>Laboratory Unit Class</th>
<th>Flammable or Combustible Liquid Class</th>
<th>Excluding Quantities in Storage Cabinets' and Safety Cans</th>
<th>Including Quantities in Storage Cabinets' and Safety Cans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maximum Quantity/ Per 100 Square Feet of Laboratory Unit</td>
<td>Maximum Quantity* Per Laboratory Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>w/o Sprinkler</td>
<td>Sprinkler'</td>
</tr>
<tr>
<td>A' (High Hazard)</td>
<td>I, I, II and IIIA'</td>
<td>10 Gallons</td>
<td>300 Gallons</td>
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<tr>
<td></td>
<td></td>
<td>20 Gallons</td>
<td>400 Gallons</td>
</tr>
<tr>
<td>B' (Intermediate Hazard)</td>
<td>I, I, II and IIIA'</td>
<td>5 Gallons</td>
<td>150 Gallons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 Gallons</td>
<td>200 Gallons</td>
</tr>
<tr>
<td>C' (Low Hazard)</td>
<td>I, I, II and IIIA'</td>
<td>2 Gallons</td>
<td>75 Gallons</td>
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<tr>
<td></td>
<td></td>
<td>4 Gallons</td>
<td>100 Gallons</td>
</tr>
</tbody>
</table>

For SI Units: 1 gal = 3.785 L; 100 sq ft = 9.3 m²

1. Class A Laboratory units shall not be used as instructional laboratory units.
2. Maximum quantities of flammable and combustible liquids in Class B and Class C instructional laboratory units shall be 50% of those listed in the Table.
3. For maximum container sizes
4. Regardless of the maximum allowable quantity, the maximum amount in a laboratory unit shall never exceed an amount calculated by using the maximum quantity per 100 square feet of laboratory unit. The area of offices, lavatories, and other contiguous areas of a laboratory unit are to be included when making this calculation.
5. The maximum quantities of Class I liquids shall not exceed the quantities specified for Class I liquids alone.
6. Where water may create a serious fire or personnel hazard, a nonwater extinguishing system may be used instead of sprinklers, or the combustible metals must be stored properly or separately stored to prevent contact with water.
7. See description of Flammable Liquid Storage Room in Section 4-4 of NFPA 30, *Flammable and Combustible Liquids Code.* See description of Storage Cabinet in Section 4-2 of NFPA 30.

### Ethyl Ether

Ethyl ether is an extremely volatile liquid requiring special considerations in its handling and usage. The liquid deteriorates with age and may become explosive.

1. Cans of ether must be dated when received and opened. After 6 months the unused ether needs to be disposed of or inspected to ensure that the container is in good condition and that no explosive peroxides have formed.

2. Purchase ether in quantities that will be readily used.
3) Store opened containers of ether in a flammable liquid storage cabinet or in an approved refrigerator if available.

4) Conduct work with ether in a well ventilated area such as a chemical fume hood and away from heat and sources of ignition.

5) Do not discard waste ether into the plumbing system. Contact OEHS.

3. **Storage and Handling of Corrosives and Caustics**
   a. Store caustic and corrosive materials on lower shelves to minimize the danger of bottles falling from upper shelves and causing injury.
   b. Separate containers to facilitate handling. Organic acids (acetic acid and acetic anhydride) must be stored separately from strong oxidizing agents (sulfuric, nitric, or perchloric acids) to prevent interaction of fumes and corrosion of storage cabinets. Acids must be stored away from bases.
   c. Acid bottle carriers must be used for containers over one quart in size.
   d. If quantities of acids or alkalies are being used, work in a sink so that breaks or spills can be controlled.
   e. Wear eye protection devices and protective clothing when handling corrosive materials.
   f. Do not pipette any of these materials by mouth. Do not sniff reagents.
   g. Dilution: Use great care and add reagents slowly. **Always add acid to water, never water to acid.** Allow acid to run down the side of the container and mix slowly by gentle rotation. Avoid over heating.

4. **Storage and Handling of Reactives**
   a. Reactive chemicals decompose under conditions of mechanical shock, elevated temperature, or chemical action with forces that release large volumes of gases, heat, toxic vapors, or combinations thereof. Consult regulations, MSDSs, and other literature before using explosives and related reactive materials.
   b. Use the smallest quantities of reactive chemicals required for the experiment being conducted. Do not keep large quantities of reactive chemicals on hand or in storage. Some reagents can become unstable over time. Date reactive materials when opened and be sure to use them up before the expiration date if they are such that they may become unstable over time.
   c. Segregate reactive chemicals from incompatible materials or from any material that might cause adverse reaction if combined with the reactive chemicals.
   d. Use protective apparel and equipment when using reactive chemicals, particularly protective eyewear and shielding.
e. Warning signs must be posted stating the danger and the procedures to follow should an emergency occur.

5. Storage and Handling of Toxics and Poisons

Toxic substances must be used in accordance with the CHP. Special attention must be paid to the sections on work with select carcinogens, reproductive toxins, and substances with a high degree of acute toxicity. (See I.I, Work with Select Carcinogens, Reproductive Toxins, and Substances with a High Degree of Acute Toxicity, above.)

IV. Laboratory (or Studio) Close-Out

A. Close-Out Plan
B. Close-Out Check List
C. Move-In Guidelines

IV V. LABORATORY (or STUDIO) CLOSE-OUT

Supervisors/principal investigators are responsible for the safe operation of their laboratories or suite of laboratories. This responsibility includes leaving any and all labs/studios in a safe condition when a lab/studio is vacated or renovated. The guidelines and checklist provided here are designed to help supervisors/principal investigators organize and execute a safe and timely laboratory close-out.

Note: The information provided here is designed primarily with laboratories in mind but applies also to studios (e.g., fine art studios). Supervisory personnel responsible for studios within their unit(s) should follow the same procedures and forms outlined here for laboratories.

Although unforeseen circumstances may necessitate last-minute preparations, generally a lab close-out should begin 90 days in advance and should be organized in three stages: 1) 90 days before vacating, 2) 30 days before vacating, and 3) moving day. The supervisor/principal investigator has the responsibility of orchestrating the move. OEHS, through its Chemical Safety Manager, shall work with the supervisor/principal investigator and the Departmental Safety Representative (DSR) in preparing a step-by-step plan and target dates for executing the close-out. The OEHSHazardous Waste Specialist shall help develop that part of the plan involving disposal of hazardous waste and the transfer of hazardous materials to the new location. If biological agents or radioactive materials are involved, OEHS’s Biosafety Officer and Radiation Safety Officer shall participate in close-out planning.

The unit responsible for the laboratory being vacated shall bear the costs associated with close-out which would include the cost of hazardous waste disposal, cleanup, and decontamination. If the supervisor/principal investigator and other lab personnel fail to close-out the lab as required, the unit shall also bear the cost of any fines imposed if violations of close-out procedures are discovered by regulatory agencies. Close-out requirements must be met before the vacated laboratory can be re-occupied.
DSRs, supervisors/principal investigators should not hesitate in asking questions, seeking assistance or information from OEHS during any stage of a laboratory close-out. Phone numbers and e-mail addresses of the Chemical Safety Manager and the Hazardous Waste Specialist are located at the front of this section (page 2).

A. Close-Out Plan

1. 90DaysBeforeVacating

A Laboratory/Studio Close-Out Notification (Form 22F-OEHS located in Appendix E of this manual) must be completed and forwarded to the Chemical Safety Manager (mailing address is on the form). The unit head must receive a copy of the notification.

While waiting for a response from OEHS, review the lab/studio close-out checklist (see IV.B, below) to get a idea of the items that have to be considered in devising a close-out plan. After reviewing the Lab/Studio Close-Out Notification, the Chemical Safety Manager or other OEHS representatives shall arrange to accompany the supervisor/principal investigator and the unit’s DSR on a tour and survey of the lab to be vacated. OEHS shall use input from the survey and discussions with the DSR and supervisor/principal investigator in developing a close-out plan that will include target dates for critical steps in the close-out process.

2. 30DaysBeforeVacating

With the close-out plan and target dates in mind:

❖ Follow-up with OEHS on the status of each item in the plan 1) to ensure that the project is on time, 2) to assess what has been accomplished, and 3) to prepare for what remains to be done.

❖ Survey the laboratory to ensure that no new materials have been generated during close-out preparations. Make certain that all unknown materials have been identified.

❖ Review plans for transfer of hazardous materials to the new or temporary laboratory with OEHS, especially materials of high toxicity (e.g., highly reactive, or shock sensitive chemicals, toxic gases, etc.) or infectiousness. Advise OEHS if its assistance will be needed in the transfer. Consult with OEHS, and particularly the Hazardous Waste Specialist, on the transport of any hazardous materials from one site to another, especially if transport requires use of public roads. Transportation of hazardous materials on public roads requires a DOT (Department of Transportation) certified driver.

❖ Visit the new or temporary laboratory to ensure that prior occupants (if any) have not abandoned any equipment, or left any hazardous materials behind.

❖ Follow-up on any modifications of the new or temporary lab that must be completed before the move.

❖ Make certain that personal protective equipment (e.g., gloves, goggles, glasses), supplies (e.g., boxes, plastic bags, containers for broken glass, spill kits), or signage needed on moving day have been ordered.
3. **Moving Day**

- Wear the appropriate personal protective equipment for the materials being handled (safety glasses, goggles, laboratory coat, gloves, closed-toe shoes, etc.).

- Have boxes, plastic bags, containers for broken glass, spills, kits, and othersuch supplies, ready and available before you begin.

- Package and move laboratory items only during normal business hours of 8:00 a.m. to 4:30 p.m. so that OEHS staff will be available in the event of an accident or spill. If the move cannot be completed within the allotted time, OEHS must be notified immediately.

- Remember that OEHS guidance must be sought in the transport of hazardous materials.

- Lock the vacated laboratory when the move has been completed and return the key to the appropriate unit administrator.

- Before entering the new lab, make certain no hazardous materials were left behind.

- Post any required warning signs (e.g., “radioactive materials,” “biohazard”) in the new or temporary laboratory. Locate safety showers, eyewash stations, fire extinguishers, and all available means of exit from the lab and the building. Include these location notes in preparing standard operating procedures for the new lab.

- Use the **Lab/Studio Close-Out Certification (Form 23F-OEHS)** located in Appendix E of this manual) to notify the Chemical Safety Manager that the vacated laboratory is ready for a final close-out inspection.

**B. Close-Out Checklist**

1. **Hazardous Materials**

   a. Verify that ALL chemical containers are properly and clearly labeled at ALL times; doing so will eliminate the cost of identifying “unknown” chemicals prior to waste disposal, one of the most costly close-out activities. If unknown chemicals are present, segregate them for identification.

   b. Keep waste streams (i.e., chemicals, radioactive materials, biologicals, sharps) separate when packaging for disposal. If there is any radioactive/biological or chemical/biological mixed waste, segregate for proper disposal according to appropriate waste disposal methods. Contact the OEHS Hazardous Waste Supervisor or the Radiation Safety Officer for assistance.

   c. Facilitate recycling efforts by making unopened, usable chemicals or supplies available to others in the same unit, or to other units. Remind the recipient that the chemicals received must be added to their chemical inventory and reported to OEHS as part of the annual chemicals inventory update.

   d. Make certain that the laboratory’s chemical inventory is current. Identify those chemicals you wish to dispose, recycle, or reuse. Prepare a separate inventory of chemicals to be disposed.
disposed and/or recycled and forward a copy to the Hazardous Waste Specialist. Discuss disposal or recycling with OEHS during the initial close-out planning and as the close-out progresses.

e. In preparing hazardous materials for transport for short or long distances, verify that the materials are placed in prescribed containers designed to prevent release and/or spillage.

f. Check shared labs, instrumentation rooms, under hoods, inside freezers, refrigerators, or cold rooms for biological agents, chemicals, or radioisotopes that might easily get left behind.

g. Return gas cylinders and lecture bottles that will no longer be used to the supplier for disposal. Cylinders that cannot be returned to the supplier for disposal shall be included in the inventory of materials for disposal.

h. All counters and surfaces must be cleaned, disinfected, or decontaminated to ensure that no biological, chemical, or radioactive contamination remains.

2. **Radioactive Materials**

   a. Unused, usable radioactive materials shall be transferred to other principal investigators subject to the approval of the Radiation Safety Officer and in accordance with procedures outlined in the University’s Radiation Safety Manual.

   b. The Radiation Safety Officer shall make arrangements for the proper disposal of all radioactive materials that are not transferred.

   c. Discuss packaging and moving of radioactive sources during the initial close-out planning and as the close-out progresses. Radioactive sources might require shielding for safe transport.

   d. Make certain that no equipment is moved with external radiation contamination present. A radiation wipe and meter survey may need to be conducted by lab personnel for smaller equipment, freezers, and refrigerators.

3. **Laboratory Equipment**

   a. Biological safety cabinets must be decontaminated with appropriate disinfectants by the supervisor/principal investigator prior to moving. Once this initial decontamination is completed, contact OEHS. OEHS personnel shall conduct a final decontamination prior to moving the cabinets to the new location. Cabinets must be certified by OEHS prior to use in the new location. If the cabinets are to remain in the original lab oratory, they must be decontaminated with appropriate disinfectants before the lab is vacated.

   b. Prior to moving, chemical fume hoods must be inspected by OEHS for explosive perchlorate/nitrate crystals. If perchlorate crystals/nitrate crystals are found, the hood/ducts will need to be washed. Arrangements for this should be made with Facilities Services. OEHS will be present to test the wash water and hood until no further contamination is observed.
c. Fume hoods that will remain in the original laboratory must be appropriately cleaned/decontaminated (soap and water, disinfectants, etc.) by the supervisor/principal investigator before the lab is vacated.

d. Schedule repairs of damaged equipment (e.g., frayed wires, missing guards). Old and/or broken equipment must be decontaminated and then disposed of through the Purchasing Department.

e. Decontaminate all equipment that contains radioactive, chemical, and/or biohazardous materials before the lab is vacated.

f. In planning disposal of hazardous materials, discuss any equipment that contains hazardous materials with the Hazardous Waste Specialist to ensure proper disposal of the materials prior to moving the equipment.

g. Contact the manufacturer of liquid scintillation counters well in advance to arrange for removal of any internal radiation sources so that the equipment may be discarded or shipped.

4. Biological Materials

a. Dispose of sharps/biological wastes following procedures outlined in Section 22. Biological Safety of this manual. Autoclaving may be necessary for certain agents.

b. Make available any unopened, unused, usable sharps and/or biological agents to others in the unit or to other units. Select biological agents may require special precautions. Contact the Biosafety Officer for more information. The laboratory accepting any biological agents/cell lines must notify OEHS.

c. Review plans for the transport of biological materials and DOT transport regulations with OEHS. Appropriate shipping containers, secondary containment, biohazard labeling, and personal protective equipment must be used when transporting biological materials.

5. Animal Handling. To be added at a later date.

6. Regulated Substances/Drugs. To be added at a later date.

C. Move-In Guidelines

1. The New Laboratory

a. Look at the new lab with these questions in mind: 1) Where will you place large equipment and cabinets? 2) Are electrical outlets where they are needed? 3) Have lips been installed on existing shelves and are shelves secured to the wall? 4) Are there special facility needs (e.g., 220 volt electrical outlets, special ventilation such as local exhaust, fume hoods) that need to be addressed before the new space is occupied? 5) Are there eye wash stations/safety showers and fire extinguishers readily available?

b. Contact the Biosafety Officer to determine if there are any special permits or requirements for biological agents.
c. Develop standard operating procedures and a chemical inventory for the new laboratory; send a copy of each to the Chemical Safety Manager. Obtain any needed material safety data sheets for the new lab (on website at http://tulane.edu/oehs).

d. Discuss any reactive or highly hazardous or unusual chemicals that may require special handling and/or disposal with the Hazardous Waste Specialist.

e. Discuss any use of radioactive materials in the new area with the Radiation Safety Officer. Remember that a license is required for purchase of radioactive materials.

f. Discuss any laboratory door signs or warning signage needed for the new lab with the Chemical Safety Manager.

g. Supervisors/principal investigators must train laboratory personnel regarding new procedures/work practices, location of personal protective equipment, engineering controls, new hazards, concerns, etc., with respect to the new laboratory area. This training must be documented on a Employee Safety Training Acknowledgment (Form 04F-OEHS located in Appendix E of this manual) and a copy of the documentation sent to OEHS.

2. New Lab Personnel

   a. Contact OEHS as soon as it has been established that a new researcher will be joining the unit if there are health and safety issues associated with the work the researcher will be conducting.

   b. Chemicals brought to the University by a new researcher must be pre-approved by OEHS.

   c. Do not accept any hazardous materials as terms for employment of a new researcher. Unless the chemicals are pre-approved by OEHS, the University shall not be responsible, and shall hold the researcher liable for: 1) any incidents that may arise involving these materials, 2) any releases incurred because of the materials, and 3) any disposal costs.

*End of Text — Return to Section 30, Page 1 Outline*
SECTION 31
OFFICE SAFETY

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      4. Preventing Falls and Collisions
      5. Climbing
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ADDITIONAL READING

Basic Safety Practices  Section 10
Emergency Response  Section 1
Ergonomics  Section 11
Fire Safety  Section 26

I. Office Safety

A. General Safety Guidelines

The following are general guidelines for on-the-job safety and hazard avoidance. Employees should be on the alert for and immediately report any hazard or hazardous situation to their supervisors/principal investigators. Tulane’s Office of Environmental Health and Safety is also available to employees for help in identifying or reporting safety problems or concerns.
1. **Furniture, Equipment, Supplies**

   a. Do not rear back while seated in a chair; keep all four chair legs on the floor.

   b. Use handles when closing file drawers, desk drawers or disappearing typewriter desks. Report “hard to open” file and desk drawers. File cabinets should be filled from the bottom up to avoid top loaded drawers that may tip over.

   c. Keep file drawers, desk drawers, slides, and locker doors closed when not in use. To prevent file cabinets from tipping over, open one file drawer at a time, and when filling cabinet drawers, always start from the bottom up.

   d. Place equipment, typewriters, computers (CPU, monitor, keyboard), and adding machines firmly on your desk, away from the edges. **Centralize your equipment and tools**: make certain that frequently used supplies and equipment are in your immediate work area and placed within safe reach. (See, IV. Ergonomic Workstations, below, and Section 11. Ergonomics, of this manual.)

   ![](image)

   **Centralize Your Equipment and Tools**

   e. Adjust or clean power-driven office machines only when they are turned off and unplugged. Use all machines only for the purpose and in the manner intended.

   f. Store all sharp objects carefully and keep them in the proper place, using protective guards if available.

   g. Do not overload shelves. Store heavy items on lower shelves.

   h. Do not stand on a chair, cabinet, or desk to reach an object.

   i. Arrange for assembly of large and/or heavy furniture or equipment (see, I.A.2.a-c below) through Facilities Services or the vendor.

Office Safety / Page 2 / SECTION 31
2. **Assembly and Disposal of Furniture/Equipment**
   
a. When purchasing large items such as desks, chairs, cabinets, computers, printers, etc., arrange for the manufacturer/vendor or Facilities Services to assemble the merchandise. Because more occupational injuries occur when untrained/unequipped employees remove heavy and/or awkward items from containers during assembly, it is imperative that the task of assembly be left to properly trained personnel.
   
b. For setting up new computers or related equipment, contact Technology Services. The new product, in its original box, should be placed (by the party delivering the product) near the location where it is to be installed.
   
c. For older furniture and equipment that has to be removed from an office, contact Facilities Services for pick up and Property Management Office for disposal.

3. **Lifting and Carrying**
   
a. Whenever possible, use proper tools such as a hand truck, luggage carts with rollers, etc., for assistance. Use the right tool to do the job properly. Estimate the size and weight of a load and your physical ability to handle it. Make certain the load is stacked in a manner that will permit full view once lifted.
   
b. Position your feet close to the object to be lifted and about shoulder’s width apart for good balance.
   
c. Bend your knees and get a good handhold on the item being lifted. Keep your neck in line with the plane of your back.
   
d. In a smooth movement, lift the material into carrying position. Keep the load close to your body. Do not turn or twist your back.
   
e. Always avoid twisting motions or awkward positions while lifting. Do not over extend or stretch to reach overhead objects.
   
f. Make certain the path of travel is clear before proceeding.
   
g. To set the load down, bend your knees and comfortably lower the load using leg and back muscles.

4. **Preventing Falls and Collisions**
   
a. Keep work area free of slipping or tripping hazards such as paper, wires, telephone cords, waste paper, pencils, etc. Report floor defects such as loose tiles and torn carpet. Report broken steps, railings and doors.
   
b. Wipe up spills immediately.
   
c. Keep shoes on and make certain they are appropriate for your work area.
d. Walk, don't run- especially around blind corners, past doorways, on stairs, or in corridors.

e. Do not block your view while carrying boxes. Do not stand in front of closed doors that may open suddenly, and open doors slowly when entering.

5. **Climbing**

If you must climb to reach an item, use a ladder or a step stool. *Never* use a chair.

6. **Electrical Appliances**

a. Paper should never be placed beneath heat producing appliances such as coffee pots, toasters and microwave ovens.

b. Keep combustible materials away from heat producing sources such as light bulbs and electrical appliances.

c. Make certain all coffee pots and appliances are turned off at end of a work day.

d. Electrical space heaters can be used only if issued by *Facilities Services* or *Plant Operations* as a result of any concerns regarding the primary heating system serving an area.

7. **Electrical Equipment**

a. Any equipment that sparks or emits smoke, or any equipment that gives you an electrical shock should be unplugged immediately. Supervisors should make certain that the equipment is repaired or replaced.

b. Remove from service any electrical equipment with damaged electrical cords and/or cracked plugs until the equipment is repaired.

c. **Extension cords are intended for temporary use only** such as with audio visual equipment or portable tools. Multi-outlet strips that are properly protected with a circuit breaker or fuse may be used for computer configurations.

d. Equipment with grounded (3-prong) power cords or double-insulated appliances should be purchased and used wherever possible. Improper use of adapters or “cheaters” for grounded plugs is a violation of building fire code. Properly grounded adapters may be used in areas that do not have grounded receptacles. Contact Facilities Services for more information.

e. Keep flammable and combustible materials away from electrical equipment.

8. **Broken Glass**

Use a brush and dustpan to pick up broken glass; never use your hands. Broken glass should be wrapped, marked, and safely disposed.
9. Fire

- See Section 26 Fire Safety; and, Section 1 Emergency Response, of this manual.

10. Evacuation

a. Be aware of your department’s evacuation plan so that, should an alarm sound, you will be ready to act. Know where the nearest fire alarm pull stations, extinguishers and fire exits are located. Make certain that fire exits and manual pull stations are not blocked with desks, chairs, file cabinets, etc.

b. If a fire alarm is heard, standby for evacuation orders if the building is equipped with a public address system. If there is no public address system, or any delay in sending emergency information via public address, immediately evacuate using the same predetermined route that your department uses during fire drills, which should always be the nearest stairwell or ground floor exit. Never use elevators to evacuate in the event of a fire unless so directed by fire department personnel. Once outside, stay at least 100 feet from the building to ensure unimpeded access by fire department personnel and equipment. Do not re-enter the building until an “all clear” signal is issued by security personnel or fire department officials. (See Section 26 Fire Safety; and, Section 1 Emergency Response, of this manual.)

II. Purchase of Equipment, Supplies, and Hazardous Materials

A. Purchases Requiring OEHS Approval

B. Purchase of Radioactive Materials

II. PURCHASE OF EQUIPMENT, SUPPLIES, AND HAZARDOUS MATERIALS

Purchasing, or any other Tu lane office ordering hazardous materials and equipment (or services involving same), must obtain prior approval from the Office of Environmental Health & Safety (OEHS) or verify that the department making the order has obtained approval.

Although a supervisor’s approval is sufficient for the purchase of most standard office supplies and equipment, because of the potential hazards present in some supplies or equipment used in offices (e.g., microwave ovens, electrical extension cords, multiple outlet strips) OEHS approval may also be required.

A. Purchases Requiring OEHS Approval

1. Following is a partial list of purchases requiring OEHS approval (contact OEHS for a complete list): plastic trash cans, electric extension cords, multiple outlet strips, flammable liquids in containers greater than one gallon capacity, furnishings containing polyurethane foam, portable electric heaters, radioactive materials and radiation producing equipment, hazardous materials
(acids, corrosives, poisons, carcinogens, explosives, etc.) lasers, chemical fume hoods, biological safety cabinets, laminar flow work stations, microwave-producing equipment, personal protective equipment (respirators, eye protection devices, hearing protectors, etc.), refrigerators/equipment for storing or dispensing flammable and/or combustible liquids.

2. Orders for services involving the supply, transport, and/or delivery of hazardous materials must also be approved by OEHS.

3. The purchase of gas cylinders and lecture bottles should be made only when an agreement is made with the manufacturer or distributor to return the cylinders to them when finished.

4. The purchase of mercury and/or mercury compounds must be limited because of the enormous cost for disposal of these materials. Purchase only the amount that will be used.

B. **Radioactive Materials**

For purchase orders that involve the acquisition of radioactive materials, Purchasing must verify that the department ordering the radioactive materials has a license to do so. License applications are available through OEHS and the Radiation Safety Committee.

III. **Holiday Decorations**

   A. **Holiday Trees**

   Holiday trees must not obstruct or reduce the width of corridors, stairways, or exits. Use only artificial, flame retardant, non-conductive trees with the following two exceptions:

   1. A “cut” tree that has been treated with effective flame-retardant materials, can be used in building lobbies only. Proof of flame-retardancy must be provided. Cut trees should be placed in water to retain maximum freshness and to discourage drying. Tree and water levels should be checked on an ongoing basis.

   2. An “uncut” tree or living tree with its roots still attached may also be used in lieu of an artificial tree. Live trees should be watered as required.
B. Decorative Lighting

No more than “three” Underwriter’s Laboratories (U.L.) listed miniature light sets may be used in decorating trees. Candles are prohibited unless the specific application is approved in writing by OEHS. Turn tree and other decorative lights off when the area is not occupied (nights, weekends, holidays).

C. Decorations

Flame-retardant, non-breakable decorations are recommended. Furnishings or decorations of a highly combustible, flammable or explosive character may not be used for any type of display. Decorations may not be hung from smoke detectors, automatic sprinkler heads, pipes, or in any way that would obstruct the visibility of exits or exit signs. In buildings equipped with automatic sprinkler systems, no combustible decorations are allowed within 18 inches of the bottom on sprinkler heads.

D. Extension Cords

Use of extension cords is discouraged. However, if used for the temporary purpose of holiday decorations, only one cord shall be used. The cord must be appropriately sized and U.L. approved. It must not create a trip hazard and must not be placed through concealed spaces, doorways, or windows subject to closure.

IV. Ergonomic Workstations

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B. Standing Stations

IV. ERGONOMIC WORKSTATIONS

Workstations that are not suited to the demands of an employee’s job may result in physical stress to muscles, nerves and joints. An “ergonomic workstation” is one designed to take into consideration, for example, the employee’s physical needs, type of work he/she does, and any repetitive tasks involved in the work. The primary goal of an ergonomic workstation design is to avoid awkward postures, positions (bent wrists, arms and elbows out, slumped shoulders, etc.) and movements detrimental to the human anatomy.

The following is a very brief outline of workstation set up. Employees should review Section 11, Ergonomics, of this manual, and also the OEHS website at http://tulane.edu/oehs/ergonomics/ergonomics.cfm which goes into greater detail on setting up an ergonomic computer workstation for desktop and laptop computer users.
Remember to centralize your equipment and tools so that what you need is at hand and easily accessible without stress or strain to the body.

### A. Sitting Stations

Most sitting stations involve the use of computers. Video Display Terminals (VDT) are work stations that require sitting in front of a monitor and using a keyboard and mouse.

1. **Chair**

   The chair should be fully adjustable (seat height, lumbar support, arm rests, etc.) from a seated position. A footrest may be necessary if feet do not rest comfortably on the floor.

2. **Monitor**

   a. Top of monitor screen should be at/near eye level and approximately 18 to 24 inches from the worker’s face.

   b. Document holders should be placed at the same distance and height as monitor.

   c. Adjust monitor for optimal brightness (low), contrast (high), and focus.

   d. Position monitor perpendicular to light sources (both direct and indirect) to reduce glare. Avoid placing monitor below under-cabinet lighting.

   e. If necessary, tilt monitor upward slightly to reduce glare.
3. **Keyboard and Mouse**
   a. Align keyboard with monitor and place at approximately elbow height. Place mouse pad to the right or left at height of keyboard. Proper position will allow wrists to rest at neutral position, i.e., not flexed up/down or deviated at side angles.
   
b. If keyboard (or mouse) pad is too high, use wrist rests to help support neutral wrist position.

4. **Lighting**
   a. Position your work area so that light sources, such as windows, are perpendicular to the monitor rather than directly behind you or the monitor. If necessary use shades or blinds to reduce intensity of direct sunlight.
   
b. If computer work is the primary task, consider lowering general room lighting level and using task lighting.

5. **Telephone**
   
   If heavy phone usage is required, head sets should be used to help prevent neck strain.

6. **Work Practices**
   a. Use good sitting posture to maintain proper spinal curvature and aid circulation.
   
b. Take periodic breaks away from VDT work: make phone calls, copies, file, etc.
   
c. Rest your eye muscles by changing focus from time to time. Take a few seconds to lookout the window or across the room and focus on something at least 20 feet away.
   
d. Have regular eye exams. Bifocal wearers may need a separate pair of glasses for computer work.

**B. Standing Stations**

Because prolonged standing may cause stress to legs and lower back, measures should be taken to adjust the height of the work surface and to “cushion” certain standing surfaces.

1. Workers who stand for prolonged periods should use cushioned foot wear.

2. Workers having to stand on hard surfaces should be supplied with padded mats.

3. Work surfaces should usually be somewhere between 2 to 6 inches below the worker’s elbow when the arm is in a relaxed, hanging position.

4. Foot rests and stools can be used to relieve lower back and leg stress.

خفّى نسخة النص الأصلية من المتصفح.
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ADDITIONAL READING

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FoodServicesSafety ................................. Section27

PEST CONTROL OPERATOR

Office of Environmental Health & Safety, TW-16
Main Phone Line: (504) 988-5486
Pest Control Line: (504) 988-7378

I. PEST CONTROL PROGRAM

The Office of Environmental Health & Safety (OEHS) is charged with providing a pest control program at the Health Sciences Center (for other campuses, see LB below) for common pests such as roaches, ants, gnats, mosquitoes, and mice. Since sanitation is the most important measure for controlling the pest population, OEHS circulates information on appropriate sanitary measures and performs on-site inspections (at certain locations only) to ensure compliance. Sanitary conditions alone may greatly contribute to the elimination of food sources and breeding places for rodents and insects. However, when natural measures such as sanitation are not sufficient, the pest control program
also provides chemical spraying as an alternative. Spraying is conducted by a licensed Pest Control Operator. (Food service facilities are sprayed after normal working hours.)

A. Pest Control Operator and On-Call Services

The Pest Control Operator (PCO) is licensed by the State of Louisiana and must stay current on the use of safe, effective chemicals in combating rodent and insect populations. The PCO and OEHS staff are on-call 24 hours a day, seven days a week. If a significant problem occurs after normal working hours, the PCO, or OEHS on-call staff, may be contacted via the Tulane phone operator or Security. The PCO will make an assessment, discuss options and decide whether urgent response is needed.

B. Locations Serviced

The OEHS chemical pest control service covers TUHSC, but does not include the Tidewater Building, and the Aron and Reily Pavilions. Facilities not covered may apply for pest control service at cost to the facility. OEHS inspects for termites but does not offer a treatment program.

C. Reporting Pest Problems

Concerns regarding pests should be “phoned” to (504) 988-7378. The caller should leave a message that includes his/her name, telephone number, the specific nature of the problem, and how long the problem has existed, if known.

II. Natural Pest Control

A. Eliminate Food Sources

Elimination of food sources and potential breeding areas is a primary component in reducing pest populations. In any environment, and particularly in food services, employees should:

1. keep the interior of cabinets and drawers, counter tops, and areas under equipment and appliances clean and free of food particles;

2. keep work and break areas clean and free of food particles; wipe up food and beverage spills immediately;

3. keep garbage cans, trash receptacles and the area around them clean and free of food particles; remove garbage and trash on a “daily” basis;

II. Natural Pest Control

A. Eliminate Food Sources

B. Eliminate Areas for Entry
4. properly store food in sealed containers; make certain container covers are in place and that containers are, in fact, sealed; and

5. keep record storage and furniture storage areas clean and well organized eliminating nooks and crannies that may be used by pests.

B. **Eliminate Areas of Entry**

To eliminate potential areas of rodent and insect entry, employees should:

1. keep storage at least six inches off the floor;

2. seal penetrations and openings in walls, floors, ceilings and any exterior openings;

3. keep all exterior doors closed; and

4. report automatic doors and air curtains that are inoperative.

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SECTION 33
RADIATION SAFETY

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ADDITIONAL READING

Emergency Response Section 1
Environmental Health & Safety Section 2
Hazard Communication Section 12
Hazardous Materials Safety Section 29
Inspections and Compliance Section 13
Laboratory Safety Section 30
Personal Protective Equipment Section 14

CONTACTS

RADIATION SAFETY OFFICER
Mail: OEHS TW-16
Phone: (504) 988-2867
E-mail: creindl@tulane.edu

RADIATION DOSIMETER MONITOR
Mail: OEHS TW-16
Phone: (504) 988-2868
E-mail: ksimon@tulane.edu
I. RADIATION SAFETY

A. Radiation Safety Committee

Radiation safety is the joint responsibility of the Office of Environmental Health and Safety (OEHS) and the Radiation Safety Committee (RSC). The RSC was established to ensure that radioactive materials and radiation producing devices are handled in the safest possible manner. The RSC consists of appointed members of the University faculty actively engaged in teaching and research that involve use of radioactive materials and/or ionizing radiation producing devices.

Regulations, responsibilities, and procedures promulgated by the RSC are based on, among other sources, regulations, recommendations, and guidelines of the Occupational Health and Safety Administration (OSHA), the American Conference on Governmental Industrial Hygienists (ACGIH), the American National Standards Institute (ANSI), and the Bureau of Radiological Health (BRH) and are outlined in the University's Radiation Safety Manual which is reviewed and approved by state regulatory authorities.

The University’s administration has appointed OEHS, through its Radiation Safety Officer (RSO) who is a certified radiological physicist, to provide both administrative and technical services necessary to ensure compliance with provisions of the University’s radioisotope/radiation license as outlined in the Radiation Safety Manual.

B. Compliance

Departmental Safety Representatives (DSR) help to ensure that the units they represent that handle radioactive materials and/or radiation producing equipment are in compliance with the Radiation Safety Manual and policies and procedures outlined in this section. (A unit is a department, section, center, or program, or any number or configuration of these components.) DSRs also collect and submit to OEHS any required documentation such as inspection reports, training documentation, etc., prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and, if necessary, take the issue of the non-compliant unit to the University's Environmental Health & Safety Operations Committee for resolution. See Section 2, Environmental Health & Safety, of this manual for information on the University’s Compliance Management System.)
C. **Compliance Requirements for Grant Proposal Certification**

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall *not* certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biological Safety.

II. **IONIZING RADIATION**

A. **Definition**

Ionizing radiation is any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, by interaction with matter. Ionizing radiation produces short-wavelength, highly energetic, penetrating rays (gamma rays, x-rays, subatomic charged particles) that can be extremely dangerous and even lethal if exposure is extended over a period of time.

B. **Usage of Dosimeters in Exposure Monitoring**

For employees who work in areas where there is danger of exposure to ionizing radiation (e.g., areas using x-ray equipment, radioisotopes, etc.), OEHS provides a campus-wide monitoring program to ensure that these employees are not being exposed to radiation levels that exceed safety standards. Monitoring is accomplished through the use of “dosimetric devices” (*aka* dosimeters or film badges) that are issued to at-risk employees, routinely collected, and sent to an independent lab for analysis.

Dosimeters measure radiation through a thin layer of “sensitive material” that changes its structure when exposed to radiation. Heat stimulates the sensitive material causing it to become luminescent in proportion to the amount of radiation exposure.

The University contracts a dosimetry processing service (DPS) for processing its dosimeters. Processing results are compiled into a report by the DPS and forwarded to the RSO for analysis.
The RSO uses this analysis to determine whether employees are being exposed to unsafe levels of radiation, and if so, the RSO can authorize moving the employees out of harms way until the problem is investigated and corrected. Any questions as to whether a dosimeter is required or any question about exposure history, may be directed to the RSO. Details concerning the dosimetry program may be found in the Radiation Safety Manual.

1. **Types of Dosimeters/Who Must Wear Them**

   **Whole body** dosimeters affixed to a lab jacket must be worn by employees working in areas where radioactive materials are present at certain levels. **Ring and whole body** dosimeters are to be worn by employees handling millicurie amounts of radioisotopes. **Baby dosimeters** worn at belt level are to be worn by pregnant women in addition to the whole body dosimeters they themselves wear. Dosimeters are optional for users of weak beta emitters such as H-3, C-14, P-33 and S-35.

2. **Returning Dosimeters to OEHS**

   For effective monitoring, dosimeters shall be exchanged monthly (new dosimeters are issued monthly by the RSO). Within two days of being issued new dosimeters, employees must return their used dosimeters to the employee designated (by the supervisor) to collect them. The designated person shall then forward the used dosimeters to OEHS’s **Radiation Dosimeter Monitor**.

C. **Purchase, Usage, Handling of Radioactive Materials**

   Units needing to purchase radioactive materials must obtain a license to do so from the Radiation Safety Committee. Obtaining a license requires that an application be submitted to the RSO; the RSO shall submit the application to the Committee. Once the license is obtained, the RSO must nevertheless approve all purchases of radioactive materials and radiation producing equipment. Purchasing must verify that the unit ordering radioactive materials has a) a license to do so, and b) approval from the RSO.

   1. In order to avoid undue exposure to ionizing radiation, unauthorized employees must not enter a laboratory where radioactive materials are being used except when accompanied by an authorized person.

   2. Only persons specifically authorized shall prepare and/or administer tracer and/or therapeutic doses of any radioactive material.

   3. There must be no eating, drinking or smoking in the isotope storage, preparation or usage areas.

   4. There must be no storing of food and/or drink in refrigerators located in isotope storage and preparation areas.

   5. All radioactive materials must be stored, handled, and administered in designated areas approved by the RSO.

   6. Employees authorized to handle, or assist in the handling of radioactive materials shall wear radiation dosimeters when indicated by the RSO.

   7. All employees must wear laboratory coats while handling or administering radioactive materials.
8. All employees must wear rubber gloves while handling liquid radioactive material and disposing of decayed radioactive materials.

9. Mouth pipetting of radioactive materials under any circumstances is prohibited.

10. Areas where radioactive materials are used or stored must be identified by the appropriate signage.

D. Spills Involving Radioactive Materials

1. Minor Radiation Spill

   A minor radiation spill is one that laboratory staff is capable of handling safely without the assistance of safety and emergency personnel. All other spills are considered major.

   ◆ Alert people in the immediate area of the spill.

   ◆ Assemble all potentially contaminated persons and monitor them before allowing them to leave the area. Shoes should be included in the monitoring of clothing.

   ◆ If employees are found to be contaminated, instruct them to remove contaminated clothing, rinse exposed body areas and then wash these same areas with soap and water, monitoring the contaminated areas after each washing. Safety showers should be used if available.

   ◆ Wear protective equipment including safety goggles, disposable gloves, shoe covers, and lab coat before any cleanup activity.

   ◆ Place absorbent paper towels over liquid spills. Place towels dampened with water over spills of solid materials.

   ◆ Collect paper towels in a plastic bag using forceps.

   ◆ Dispose of materials in containers labeled “radioactive waste.”

   ◆ Contaminated clothing must be collected in the same manner (with forceps), bagged, and labeled with appropriate warning before being forwarded to the laundry.

   ◆ Use an appropriate survey meter or method when monitoring for contamination.

   ◆ Repeat cleanup until contamination is no longer detected.

   ◆ Rinse, then wash hands with soap and water upon completion of cleanup.

   ◆ Notify the supervisor/principal investigator, OEHS (Radiation Safety Officer) and Security.

2. Major Radiation Spill

   ◆ Immediately notify the supervisor/principal investigator, OEHS (Radiation Safety Officer), and Security. Alert employees in the area of the spill.
Assemble all potentially contaminated persons and monitor them before allowing them to leave the area. Make certain that shoes are monitored along with other clothing.

If attending others who are injured and unable to help themselves, make certain that you are wearing the appropriate personal protective equipment.

Instruct contaminated persons to remove contaminated clothing and wash exposed body areas with water first (using a safety shower if available), and then with soap and water, monitoring the contaminated areas after each washing.

Wait for response from OEHS (Radiation Safety Officer). Employees from the laboratory shall be required to provide support to OEHS employees in the “uncontaminated” area.

E. Potential Hazards or Malfunctions of Radiation Producing Equipment

1. Electrical Hazard or Malfunction

   If any piece of radiation producing equipment presents a possible electrical hazard or malfunctions, the following procedures must be adhered to: a) all equipment in affected area must be shut down immediately; b) main "on-off" switch (or button) turned to "off"; c) all circuit breaking switches turned to "off"; d) evacuate employees from area; e) notify supervisor or principal investigator immediately.

2. Mechanical Hazard or Malfunction

   If any unsafe or potentially unsafe condition is noticed with respect to radiation producing equipment, it must be reported immediately to the supervisor/principal investigator. If the well-being of any employees, students, or visitors may be jeopardized, evacuate the area immediately, then report the unsafe condition.

3. If an evacuation of personnel is required because of electrical or mechanical hazard or malfunction, employees should be evacuated to a designated area and monitored for radiation exposure before being released.

   - See, Section 24, Facilities Services, VIII, Equipment Lockout/Tagout, of this manual for information on reaching zero mechanical state and tagging machinery that requires maintenance or repair work.
III. Non-Ionizing Radiation

A. Definition

Non-ionizing radiation is any electromagnetic radiation that does not cause ionization in biological systems and that has photon energies less than 10-12eV. Non-ionizing radiation can cause dissipation of energy in the form of fluorescence or heat. Sources of non-ionizing radiation, including lasers and radio frequency/microwave sealers, heaters and transmitters shall be used in accordance with “Standards for the Construction Industry” (OSHA 29 CFR 1926.54), “Standards for General Industry” (OSHA 29CFR 1910.97), Bureau of Radiological Health regulations, and recommendations of the American Conference of Governmental Industrial Hygienists.

B. High Frequency/Microwave Radiation

1. Exposure to radiation in the frequency range from 0.01MHz to 300 GHz shall not exceed the Threshold Limit Values (TLVs) established by the ACGIH.
2. OSHA covers frequency ranges from 10MHz to 100GHz with a limit of 10mW/cm² as averaged over any one-tenth hour (OSHA Regulations, 29CFR Nonionizing Radiation 1910.97, Radiation Protection Guide (a)(2)(i)).

C. Laser Generating Equipment

1. Policy

The University shall make certain that all laser generating equipment is controlled and operated in such a manner that employees are not overexposed to non-ionizing radiation. Laser safety guidelines are established as recommended by the American National Standards Institute and the American Conference of Governmental Industrial Hygienists. The University’s laser safety program is under the direction of OEHS.

2. Responsibility

The responsibility for properly maintaining and operating laser generating equipment in a safe manner must rest with trained and qualified employees. For this reason, the Department of Biomedical Engineering at TUHSC and trained service employees at other campus locations are charged with servicing laser equipment, while OEHS is responsible for environmental conditions, operating techniques, and protective equipment.

3. Pre-Installation Procedures

OEHS shall 1) perform a pre-purchase evaluation of all electronic equipment; 2) receive notification of any plans to install lasers; and 3) conduct an environmental survey of the area intended for laser use, review the classification of the laser intended for the area, and provide details of any specific changes required.

4. General Controls

a. Each laser shall be operated under the direct supervision of an individual knowledgeable in its use and in applicable safety procedures.

b. Each laser shall be operated, maintained, and serviced only by qualified persons trained in the hazards of lasers and the control of such hazards. Outside service technicians shall abide by all University internal procedures when servicing lasers.

c. All controls, labels, settings, etc., shall be maintained in accordance with the manufacturer's instructions.

d. Laser equipment must bear a label indicating maximum output. Areas in which lasers are used shall be posted with standard laser warning placards.

e. A laser beam must never be directed at any person.

f. Lasers shall be turned off when laser transmission is not required.

g. Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser.
h. Due to the hazard of uncontrollable scattered rays, the outdoor operation of laser systems shall be prohibited where practicable when it is raining or snowing or when dust or fog is in the air.

i. Anti-laser eye protection shall be provided in areas where the potential exposure to direct or reflected laser light may be greater than 5 milliwatts. Laser equipment shall bear a label indicating maximum output. **No one shall be exposed to light intensities above the following levels:** Direct Staring = 1 microwatt/cm²; Incidental Observing = 1mw/cm²; Diffused Reflected Light = 2.5 watts/cm².

j. Following maintenance, service, or modifications that could increase or decrease the hazardous nature of the laser, the LSO shall determine if changes in safety equipment or procedures are warranted.

D. **Laser Control Area - Required for Work with Class 3 and 4 Lasers**

1. Admittance to the area shall be controlled so that unauthorized or unexpected entry is not possible while the laser is in operation. Provisions such as a panic button to deactivate the laser for emergency entry and exit shall be maintained. Authorized persons may enter if there is no optical hazard at the point of entry and protective eyewear is worn.

2. Where feasible, only diffusely reflective material shall be used in or near the beam path.

3. Any windows shall be covered or restricted to prevent the beam or any reflection from exiting the controlled area.

4. A sign approved by OEHS shall be posted at the entrance to the area with a warning light to indicate when the laser is on.

5. Room and/or instrument lighting shall be adjusted as required to account for the use of protective eye wear.

6. Where recommended by the LSO, an audible alarm and/or light (visible through protective eyewear) shall be installed in the room to alert all parties that the laser is in operation.

7. Spectators shall be allowed into the area only when 1) proper supervisory approval has been granted, 2) the laser hazards and avoidance procedures have been explained, and 3) protective measures (such as eye protection) have been taken.

E. **Protective Equipment - Required for Work with Class 3 and 4 Lasers**

1. Protective goggles shall be properly selected, approved by OEHS, and worn by all present in the area while the laser is in operation.

2. The goggles shall be properly maintained, stored, and periodically inspected to verify the integrity of the lens.

3. Long sleeved clothing shall be worn to protect against excessive skin exposure.
F. Training - Required for Work with Class 3 and 4 Lasers

1. All users of lasers shall be properly trained in the hazards and the control measures for the lasers they use. Users shall include those utilizing the laser for medical or experimental procedures, technicians present during use, and service employees.

2. Training shall be conducted prior to assignment of laser use.

3. Training for all employees must be approved by the LSO.

End of Text – Return to Section 33, Page 1 Outline
# SECTION 40

Bloodborne pathogens

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## TULANE UNIVERSITY

ENVIRONMENTAL HEALTH AND SAFETY POLICIES AND PROCEDURES MANUAL

rev. October 2011

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### I. BLOODBORNE PATHOGENS

- **A. Policy**
- **B. University-wide Responsibilities**
- **C. Campus-specific Responsibilities**

### II. TULANE UNIVERSITY EXPOSURE CONTROL PLAN

- **A. Exposure Control Plan**
- **B. Exposure Determination**
- **C. Methods of Compliance**
- **D. Hazard Communication**
- **E. HBV Vaccination**
- **F. Post-Exposure Evaluation**
- **G. Recordkeeping**
- **H. HIV and HBV production and research labs**

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### PHONE CONTACTS

**Downtown New Orleans**

- Bloodborne Pathogens Coordinator/OEHS (504) 988-6608
- Bloodborne Pathogens Emergency cell (504) 419-1391
- Office of Environmental Health and Safety (504) 988-5486
- Campus Security: Health Sciences Center (504) 988-5531

**TNPRC**

- Occupational Health Nurse (business hours) (985) 871-6600
- Occupational Health Nurse pager (after hours) (985) 966-6515
- TNPRC Police (985) 871-6411

**SHC and Uptown Campus**

- Campus Security: Uptown (504) 865-5200
- Student Health Center (504) 865-5255
BLOODBORNE PATHOGENS APPENDICES


Appendix 2 - Biohazard Symbol (See top of this page)


Appendix 4 - Needlestick Prevention and Safety Act (See http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=106_cong_public_laws&docid=f:publ430.106)


Appendix 8 - EPA Approved Disinfectants (See http://www.epa.gov/oppad001/chemregindex.htm)


Appendix 10 - U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis (See, http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm and http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm)

Appendix 11 - Reportable Disease List - State of Louisiana (See http://www.dh.gov.louisiana.gov/offices/page.asp?id=249&detail=6478)

Appendix 12 - TNPRC SOP 5.3 Procedures for Employees Following Possible B Virus Exposure

Appendix 13 - TNPRC SOP 5.4 Simian Immunodeficiency Virus Exposure

Appendix 14 - Biosafety in Microbiological and Biomedical Laboratories 5th Edition (See, http://www.cdc.gov/biosafety/publications/bmbl5/)

DEFINITIONS

AIDS stands for acquired immunodeficiency syndrome. AIDS is the last stage of an infection of the human immunodeficiency virus which attacks and weakens the body’s natural immune system. Without a working immune system, infections and cancers occur that normally the individual would be able to fight off.

Blood means human blood, human blood components, and products made from human blood. It includes plasma, platelets, and serosanguinous fluids (e.g., exudates from wounds). Also included are medications derived from blood, such as immune globulins, albumin, and factors 8 and 9.

Bloodborne Pathogens (BBP) means pathogenic microorganisms that are present in human blood or other potentially infectious material and can cause disease in humans. The pathogens include, but are not limited to hepatitis B virus (HBV); human immunodeficiency virus (HIV) which causes acquired immunodeficiency syndrome (AIDS); hepatitis C virus (HCV); and pathogens causing malaria, syphilis, babesiosis, brucellosis, leptospirosis, arboviral infections, relapsing fever, Creutzfeldt-Jakob disease, adult T-cell leukemia/lymphoma (caused by HTLV-I), HTLV-I associated myelopathy, diseases associated with HTLV-II, and viral hemorrhagic fever.

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

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or that may contain sharps.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

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

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles or shielded needle devices, needleless devices, blunt needles, plastic capillary tubes) that isolate or remove the bloodborne pathogens hazards from the workplace.

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

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

Hepatitis B Virus (HBV) is a virus that attacks the liver and can lead to lifelong infection. HBV can cause cirrhosis (scarring) of the liver, liver cancer, liver failure, and death. HBV is transmitted through bloodborne, sexual, and perinatal transmission. There is a vaccine available to help protect against acquiring Hepatitis B.

Hepatitis C Virus (HCV) is a virus that attacks the liver and can lead to cirrhosis and liver cancer. It is transmitted through contact with infected blood, contaminated needles, razors, and tattoo or body piercing tools as well as from mother to infant. Currently there is no vaccine effective against HCV.

Herpes B also known as Herpesvirus simiae, Cercopithecine herpesvirus-1, or B-Virus, is a member of the herpes group of viruses that occurs naturally in Macaque monkeys and possible in other Old World monkeys.

High Risk Employee means an employee who has ongoing contact with patients and/or blood/body fluids and is at
ongoing risk for injuries with sharp instruments or needlesticks.

**HIV** means human immunodeficiency virus. HIV causes the disease AIDS.

**Licensed Health Care Professional** is a person whose legally permitted scope of practice allows him or her to independently perform the activities of administering Hepatitis B vaccination and post-exposure evaluation and follow-up.

**Needleless System** means a device that does not use needles for:
1) the collection of body fluids or withdrawal of body fluids after initial venous or arterial access is established;
2) the administration of medication or fluids; or
3) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

**Non-intact Skin** includes skin with dermatitis, hangnails, cuts, abrasions, chafing, acne, etc.

**Occupational Exposure** means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties. It includes the potential for contact as well as actual contact with blood or other potentially infectious materials (including regulated waste) as well as incidents of needlesticks.

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

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

**Personal Protective Equipment (PPE)** is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

**Production Facility** means a facility engaged in industrial-scale, large volume or high concentration production of HIV or HBV.

**Regulated Medical Waste** means liquid or semi-liquid blood or OPIM; contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed; items that are caked with dried blood (could flake off) and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM.

**Research Laboratory** means a laboratory producing or using research laboratory scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

**Sharps with Engineered Sharps Injury Protections** means a non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.
**SIV** (simian immunodeficiency virus) is a lentivirus that causes a disease in monkeys similar to AIDS and that is closely related to HIV-2.

**Source Individual** means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients, clients in institutions for the developmentally disabled, trauma victims, clients of drug and alcohol treatment facilities, residents of hospices and nursing homes, human remains, and individuals who donate or sell blood or blood components.

**Standard Precautions** is an approach to infection control. All human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

**Sterilize** means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

**Work Practice Controls** means controls that reduce the likelihood of exposure by altering the manner in which a task is performed such as prohibiting recapping of needles by a two-handed technique.
I. **BLOODBORNE PATHOGENS**

A. **Policy**

Tulane University (TU) is committed to protecting and providing a safe environment for employees whose work involves a potential for occupational exposure to blood and other potentially infectious materials with the hope of preventing injuries, illnesses, and possibly death. In support of this commitment and in compliance with the Occupational Health and Safety Administration’s (OSHA) Bloodborne Pathogen Standard (29 CFR 1910.1030) designed to protect health care and other workers at risk of occupational exposure to bloodborne pathogens (including but not limited to HBV, HCV, and HIV), this Exposure Control Plan has been developed. Provisions of the OSHA Standard, including standard precautions, is strictly enforced at all campuses and requires that: 1) employees are educated and trained to work safely with blood and other potentially infectious materials. 2) that available vaccines for protection against bloodborne infectious diseases are encouraged and provided without cost to the employee.

B. **University-wide Responsibilities**

1. The COEC (Control of Occupational Exposures Committee): responsible for annual review, assessment, and approval of the Exposure Control Plan, and for assisting in solving any problems with its implementation.

2. **Policy Committee**: responsible for final review and approval of the Exposure Control Plan.

3. **Office of Environmental Health & Safety** (OEHS) is responsible for:
b) participating as a representative during an OSHA inspection.

c) assisting in monitoring engineering and work practice controls, personal protective equipment, housekeeping, waste disposal, decontamination, and communication of hazards to employees (signs and labels).

d) ensuring that a method is in place to properly dispose of potentially infectious biomedical waste in accordance with federal, state and local regulations.

e) ensuring certification of biological safety cabinets at least annually.

f) maintaining a confidential Sharps Injury Log independently from OSHA 300 Log to help track trends in sharps related occupational exposures. The Sharps Injury Log will be completed when an accident occurs that involves an occupational exposure to a potentially infectious substance via needlestick or other sharps injury. The log is reviewed at least annually as part of the annual evaluation of the program and is maintained for at least five years following the end of the calendar year they cover. All personal and confidential identifiers are removed before copying or printing.

g) responding on a 24-hour basis to calls regarding blood and biospills within the University. OEHS can be reached by phone (504)988-5486.

4. **Bloodborne Pathogens Coordinator** (BBP Coordinator), a member of OEHS, is responsible for:

a) reviewing and updating (at least annually) the Exposure Control Plan, assessment of the plan to ensure its appropriateness, and for making recommendations to the COEC. The BBP Coordinator is also responsible for assisting in the development and administration of any additional related policies and practices required to ensure the ECP’s effectiveness.

b) participating as a representative in an OSHA inspection.

c) providing orientation and annual education and training (in-service and/or web-based) on bloodborne pathogens regulations and recommendations and keeping appropriate training records. (See, [http://tulane.edu/oehs/training/bbptrainingcourse.cfm](http://tulane.edu/oehs/training/bbptrainingcourse.cfm) for online bloodborne pathogens course.) The BBP Coordinator will contact Workforce Management to obtain a listing of all employees. The BBP Coordinator shall also notify at-risk employees when annual training is due.

d) reviewing surveys and/or inspections, where applicable, to assist in solving problems associated with bloodborne pathogens.

e) ensuring that the HBV vaccine is available, free of charge, to all employees who are at risk or occupational exposure and that antibody tests are also made available free of charge to all high risk employees. Non-responders to the vaccine will be offered additional vaccine series free of charge in accordance with current Centers for Disease Control (CDC) recommendations.

f) keeping confidential medical records on exposure incidents and monitoring the management of occupational exposures to bloodborne pathogens. The BBP Coordinator will notify the COEC and administrative personnel of trends and/or problem areas that need to be addressed. The BBP Coordinator will perform ongoing surveillance of all exposures and review each exposure incident to determine ways to prevent future occurrences. In areas where the BBP Coordinator determines that injuries have been incurred during the same procedure, using the same equipment, in the same location, or among similar employees, alternative engineering controls and work practices that may reduce exposures are considered, evaluated, and instituted where necessary.
g) ensuring counseling is available to employees after an exposure incident and as requested, and/or arranging a referral or consultation with an infectious disease physician.

h) working with the healthcare facility where the bloodborne exposure occurred to obtain source blood laboratory test results for HIV, HBV, and HCV when applicable.

i) ensuring that the treating healthcare professional is provided with the necessary information for medical management of the occupational exposure.

j) ensuring that the testing laboratory stores and preserves (for a minimum of 90 days) the blood of an employee who consents to baseline collection after an occupational exposure but who does not give consent for HIV serologic testing at that time. The employee may later opt to have the baseline sample tested.

k) ensuring that a program is in place for handling contaminated laundry/linens.

5. **Office of Biosafety** is responsible for providing a biosafety plan for all Tulane supported/sponsored research activities and facilities. This biosafety plan will be reviewed and updated annually.

6. **Workforce Management Organization (WFMO)** is responsible for:

a) providing a current listing of all employees with their respective job code extents when requested by OEHS.

7. **Tulane University Supervisors** (hereafter referred to as Supervisors) can include, but are not limited to, supervisors, department heads, directors, or managers. They are responsible for:

a) ensuring that the Workforce Management Organization is notified prior to hiring employees who may have potential exposure to bloodborne pathogens and upon termination of these employees.

b) assisting the BBP coordinator in ensuring that their at-risk employees receive the HBV vaccine series or sign declination form 1) as soon as possible for existing employees and 2) at the time of assignment for new or transferring employees. Each department is responsible for accepting charges incurred for providing hepatitis B vaccine series or antibody testing for employees with exposure to bloodborne pathogens.

c) assisting the BBP coordinator in ensuring that their at-risk employees are trained in bloodborne pathogens procedures and that this training is documented as soon as possible for existing employees, prior to job assignment for new or transferring employees, and annually thereafter if continued to be employed by Tulane in an at-risk position.

d) following and enforcing the Standard Precautions Policy (BBP Appendix 1). Please note: Supervisors are expected to take disciplinary action should an employee fail to comply with recommendations and guidelines outlined in this Exposure Control Plan.

e) ensuring that employees are fully trained and follow procedures and use the appropriate equipment correctly. Supervisors must make certain that personal protective equipment (PPE) is available, appropriate, and provided free of charge to employees. They must ensure that contaminated PPE is properly laundered, cleaned, disposed of, and/or replaced as necessary at no cost to the employee.

f) ensuring that equipment is properly decontaminated, and that the decontamination and clean-up of blood/body fluids or spills is handled in an appropriate manner. Please note: Tulane OEHS is available 24 hours a day by calling (504)988-5486.
g) following-up exposure incidents with a signed First Report of Occupational Injury/Illness Form and directing exposed employees to an appropriate facility for medical evaluation and treatment (BBP Appendix 6, Form 18F-OEHS).

h) performing inspections and surveys, if applicable to the supervisor’s area, noting problems contributing to exposure to bloodborne pathogens and taking appropriate steps or instituting changes to correct these problems. Inspections and surveys (copies) must be sent to OEHS for review.

i) investigating occurrences in which an employee exercises professional judgment not to use PPE and documenting whether changes should be made in the future to eliminate factors that lead to such judgment in the future. A copy of such documentation must be sent to OEHS.

j) assisting in the evaluation of work practices and engineering controls to determine the appropriateness of same.

k) ensuring that safer needle devices are provided, if applicable.

l) ensuring that employees adhere to current guidelines for transporting or shipping hazardous materials.

8. Tulane University Employees shall be responsible for:

a) attending orientation and participating in training sessions annually if in an at-risk position.

b) obtaining the HBV vaccine or signing the declination form as soon as possible for existing at-risk employees, at the time of transfer to an at-risk position, and/or at the time of employment for new at-risk employees. (BBP Appendix 5, Form 27F-OEHS)

c) following this Exposure Control Plan and the Standard Precautions Policy (BBP Appendix 1).

d) reporting exposure incidents to their supervisor and completing the First Report of Injury and Illness Form and EPINet Forms, if applicable (BBP Appendix 6, Form 18F-OEHS, and BBP Appendix 7, Form 28F-OEHS).

e) pursuing follow-up care at an appropriate healthcare facility following an exposure incident.

f) using work practices, engineering controls, and PPE as outlined in this Exposure Control Plan.

9. Workers Compensation Manager is responsible for ensuring that a post-exposure evaluation and follow-up is documented and provided, free of charge, to all employees who have an exposure incident.

10. Office of the General Counsel will be responsible for:

a) reviewing forms and documents for compliance with OSHA’s Bloodborne Pathogens Standard as requested by the Tulane OEHS.

b) reviewing bloodborne pathogens-related policies as requested by the Tulane OEHS.

c) assisting in resolving employee related issues that may arise in connection with the bloodborne policy.

C. Campus-specific Responsibilities
1. Tulane University Health Sciences Center (TUHSC) - in addition to the other responsibilities listed in this document, the following additional responsibilities apply to TUHSC:
   a) The TUHSC Superintendent Facilities Services is responsible for:
      1) performing and/or arranging decontamination and cleanup where incidents involving bloodborne pathogens and other potentially infectious materials occur. All employees responding to such decontamination and/or clean-up must practice standard precautions and receive annual bloodborne pathogens training.
   b) The Director of Graduate Medical Education is responsible for the following:
      1) ensuring that medical residents and fellows are notified of and follow the policies contained in this Exposure Control Plan.
      2) assisting the BBP coordinator in ensuring that residents and fellows receive the training required by this Exposure Control Plan.
      3) assisting the BBP coordinator in ensuring that the residents and fellows are offered the HBV vaccine, and that they are provided with post-exposure evaluation and follow-up when indicated.

2. Tulane National Primate Research Center (TNPRC) - in addition to the other responsibilities listed in this document, the following additional responsibilities apply to TNPRC:
   a) Occupational Health Nurse (OHN) at TNPRC is responsible for:
      1) providing initial orientation education/training on bloodborne pathogens regulations and recommendations and keeping appropriate training records. Copies of training documentation should be made available upon request to the Chair of the TNPRC Safety Committee and the BBP Coordinator.
      2) management of the HBV vaccine series for all potentially bloodborne exposed employees at TNPRC. The OHN is responsible for offering and administering the Hepatitis B vaccine series and/or antibody tests to all at-risk employees and notifying employees when the next dose is required and recordkeeping of all HBV consent/declination forms. This includes informing them of the HBV vaccination policies and procedures and assuring that the vaccine is administered or the declination form is signed.
      3) keeping confidential medical records on exposure incidents and monitoring the management of occupational exposures to bloodborne pathogens. These records shall be provided to BBP Coordinator on request for review. The nurse shall inform the BBP Coordinator as soon as possible or at the time of injury when an employee reports an occupational exposure to bloodborne pathogens.
4) providing counseling and recommendations to employees after an occupational exposure in accordance with the recommendations from the U.S. Public Health Service and Centers for Disease Control (BBP Appendix 10). The OHN will arrange a referral or consultation with an infectious disease physician when indicated or as requested.

5) assisting with the completion of a First Report of Injury Forms to be faxed to OEHS at (504) 988-2196. The OHN will treat employee using standard first aid techniques and established standing orders at the TNPRC Occupational Health Clinic.

6) obtaining a source specimen (when applicable) for laboratory testing and make those results available to the BBP Coordinator.

7) providing data analysis and report on occupational exposures to the TNPRC Safety Committee, and the COEC.

b) The Tulane National Primate Research Center Safety Committee will be responsible for evaluating reports of occupational exposure from the Occupational Health Nurse and Tulane OEHS and providing recommendations where indicated.

3. Student Health Center (SHC) Uptown and Downtown Clinics - in addition to the other responsibilities listed in this document, the following additional responsibilities apply to the SHC:

a) The Nurse Manager will ensure that all high-risk employees in the Student Health Center practice Standard Precautions and receive annual bloodborne pathogens training if indicated.

b) All reports of bloodborne pathogens exposures and injuries involving Tulane University students and employees will be reported to the Bloodborne Pathogens Coordinator to monitor for trends or areas of need. Reports of bloodborne pathogens injury or exposure can be faxed confidentially to the Bloodborne Pathogens Coordinator at (504)988-2297.
II. TULANE UNIVERSITY EXPOSURE CONTROL PLAN

A. Exposure Control Plan (ECP)
The Exposure Control Plan is available to all employees as Section 40 of the EHS Policy and Procedures Manual and online via Tulane’s Office of Environmental Health & Safety (OEHS) website at http://tulane.edu/oehs/index.cfm. The aim of the Exposure Control Plan is to eliminate or minimize employee exposure to bloodborne pathogens and other potentially infectious materials.

The plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures that affect occupational exposure, new or revised work practices or engineering controls, and new or revised employee positions with occupational exposure. The ECP is reviewed by the Bloodborne Pathogens Coordinator, OEHS, and assigned administrative personnel for each campus. Recommendations for revisions and/or updates to the plan are made to TUHSC’s COEC for their review and approval and sent to the Policies Committee for final approval. Employees failing to comply with the plans may face disciplinary action.

All contracted, temporary, and volunteer employees will also be expected to follow Exposure Control Plans in the course of their duties while on Tulane premises.

B. Exposure Determination
All employees who may reasonably be expected to be exposed to bloodborne pathogens while performing assigned job duties must participate in this bloodborne program. These duties can include, but are not limited to, the following:

- drawing of blood
- processing blood or body fluids for experimentation
- using unfixed animal or human tissue in preparations or experimentation
- working in an area where HIV or HBV is produced or research is being performed
- cleaning glassware contaminated with blood or OPIM
- disposing of waste contaminated with blood or OPIM
- transporting blood or OPIM
- working in a laboratory area where equipment or work benches can become contaminated
- handling spills or containers of infectious wastes
- cleaning blood spills, including dried blood
- handling laundry soiled with blood, OPIM, or sharps
- performing lifesaving procedures including CPR
- work that may involve first aid, removing bandages or have potential exposure to blood or OPIM in any way

I. Job classifications in which all employees have occupational exposures are:
NONE
2. Job classifications in which some employees have occupational exposures are:

- Physicians, Residents, Fellows, Interns, Physician Assistants
- Veterinarians and veterinary staff
- Nursing Staff such as: Registered Nurses, Licensed Practical Nurses, Nurse Aides/Assistants, Nurse Practitioners, Nurse Managers, Nurse Coordinators
- Program/Research Coordinator (scientific or medical care areas)
- Secretarial staff (scientific departments)
- Laundry staff
- Social workers
- Housekeeping
- Athletic personnel (coaches, assistants, etc.)
- Clinical Instructors/Professors/Faculty
- Environmental Health and Safety staff
- Childcare Workers
- Biomedical department personnel
- Security personnel
- Animal Care Tech/Trainee
- Plant operations staff
- Computer/Information Technology staff
- Facilities services staff
- Laboratory personnel (including medical research specialists/techs, research scientists, lab assistants/techs, research fellows)

3. Closely related tasks and procedures in which there is the potential for occupational exposure by employees listed include:

- Injections
- Handling refuse
- Housekeeping
- Decontaminating processes
- Lab work/experimentation
- Sharps/Biomedical waste disposal
- Rendering fist aid
- Arrests
- Handling human tissue/blood products
- Transporting biomedical lab specimens
- Repairing/moving contaminated equipment
- Cleaning blood contaminated equipment/surfaces
C. Methods of Compliance

In its enforcement of the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) and the Needlestick Safety and Prevention Act (Pub. L. 106-430) (BBP Appendix 3 and 4), Tulane recognizes that engineering and work practice controls are necessary to eliminate or minimize employee exposure. Tulane University complies with the current standards requiring the (1) annual consideration and implementation of appropriate engineering controls and (2) solicitation of non-managerial health care workers responsible for direct patient care included in the selection and evaluation when choosing devices. When engineering and work practices do not eliminate exposure, the use of personal protective equipment is required.

If engineering or work practice controls are to be effective, employee acceptance and employee training are required. All employees are encouraged to assist in evaluation of engineering controls or work practices and to identify opportunities to eliminate or minimize exposures. Tulane University solicits input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls. All employees having a documented occupational exposure incident involving bloodborne pathogens are specifically contacted for their input.

1. Engineering Controls: Where engineering controls will reduce employee exposure either by removing, eliminating, or isolating the hazard, they must be used. Examples of engineering controls include safe medical devices such as needleless devices, shielded needle devices, plastic capillary tubes, needleless or shielded needle IV line access, blunt suture needles, safer syringes, and safer phlebotomy devices.

Engineering controls must be examined and maintained or replaced on a regular schedule to ensure their effectiveness. Supervisors should conduct regularly scheduled inspections to confirm, for instance, that engineering controls such as safer devices continue to function effectively, that protective shields have not been removed or broken, and that physical, mechanical, or replacement-dependent controls are functioning as intended, with concerns being reported to the BBP Coordinator and/or COEC for further consideration, review, and recommendations.

a) Safe medical devices are generally of two types: needleless systems (e.g., needleless IV connectors) and sharps with engineered sharps injury protection (e.g., self-sheathing needles on syringes). Substitution methods such as the use of plastic (instead of glass) capillary tubes are also available.

b) The following design features for needle safety devices are important in preventing percutaneous injury:

1) A fixed safety feature provides a barrier between the hands and the needle after use. The safety feature should allow or require the worker’s hands to remain behind the needle at all times.

2) The safety feature is an integral part of the device and not an accessory.

3) The safety feature is in effect before disassembly and remains in effect after disposal to protect users and trash handlers, and for environmental safety.

4) The safety feature is as simple as possible, and requires little or no training to use effectively.

2. Work Practice Controls Work practice controls to minimize exposure include, but are not limited to, a no-hands procedure in handling contaminated sharps, eliminating hand-to-hand instrument passing, handwashing, no mouth pipetting, no food or drink in areas containing bloodborne pathogens, etc.
a) Handwashing facilities with soap dispensers are readily accessible to employees. When handwashing facilities with soap dispensers are not feasible, appropriate antiseptic hand cleansers in conjunction with clean cloth/paper towels or antiseptic towelettes are made available. When this is used, hands must be washed with soap and running water as soon as feasible. Employees must wash their hands immediately or as soon as possible after removal of gloves or other PPE.

b) Shearing, breaking, bending, recapping, or removing of contaminated needles or other contaminated sharps is prohibited. If an employee feels that he/she must use these procedures, the employee must give written justification to the BBP Coordinator stating that no alternative is feasible or that such action is required by a specific medical or dental procedure. The BBP Coordinator must review the circumstances and document with reliable evidence that no alternative is feasible. These exceptions would then be included in the next update of the Exposure Control Plan.

c) Closable, leak-proof, puncture resistant sharps containers with a biohazard symbol (BBP Appendix 2) must be available in all areas where contaminated sharps are used. Needles, sharps, or instruments must never be manipulated once placed in the sharps container.

d) Any procedure (use of sprays, brushes, and high pressure in equipment lines) that could generate splashes, sprays, or droplets of blood or OPIM is particularly hazardous and would necessitate the use of eye protection and mask or face shield to prevent contamination of the mucous membranes.

e) Eating, drinking, smoking, applying cosmetics, handling contact lenses, or other personal hygiene measures are prohibited in work areas where there is a likelihood of occupational exposure. Food and drink must not be kept in refrigerators, freezers, shelves, cabinets, or on countertops or bench tops where blood or other potentially infectious materials are present. Food preparation (cooking, heating food) must not be performed in areas where blood/body fluids are present.

f) Mechanical pipetting devices must be used for the manipulation of all liquids in the laboratory. Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

g) Regulated medical waste and all blood/ body fluid specimens must be placed in a well-constructed container with a closed secure lid and must be labeled with a biohazard label on the container or the impervious bag during collection, handling, processing, storage, transport, or shipping to prevent leakage. A second container, such as an impervious bag, must be used for transport. If outside contamination of the primary specimen container occurs, this primary container must be placed in a second properly labeled specimen container or an impervious bag to prevent leakage during handling, processing, storage, transport or shipping. If a specimen could puncture the primary container, this container must be placed within a secondary container which is puncture-resistant.

h) Employees shall dispose of regulated medical waste and other potentially infectious materials contaminated with visible blood in appropriate receptacles and hazardous waste areas designated by Tulane University.

i) If equipment cannot be decontaminated and cleaned prior to shipping or repair, the equipment must be labeled with a biohazard symbol (BBP Appendix 2) and a statement describing which portions of the equipment remain contaminated. This information must be conveyed to all involved employees, the servicing representative, and/or the manufacturer prior to handling, servicing, or shipping so that appropriate precautions can be taken.

3. Personal Protective Equipment (PPE)
Tulane University enforces use of personal protection equipment (PPE) as outlined in the Standard Precautions Policy (BBP Appendix 1) and this ECP. Examples of PPE can include, but are not limited to, gloves, gowns, laboratory coats, face shields or masks, and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. These are provided at no cost to the employee and are chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach the employee’s work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time in which the protective equipment will be used. Employees must wear protective clothing when there is a risk for occupational exposure.

All Tulane Supervisors must ensure that PPE is accessible and appropriate sizes are available. Tulane University is responsible for the repair or replacement of personal protective equipment as needed to maintain its effectiveness. If you observe a problem regarding this, please contact the Office of Environmental Health and Safety at (504) 988-5486 for assistance.

If an employee exercises professional judgment that, in the specific instance or procedure, the use of personal protective equipment would have posed an increased hazard to the safety of the worker or co-worker, then the supervisor or immediate manager will investigate and document whether to institute changes to eliminate this in the future. A copy of such documentation should be sent to OEHS and the BBP Coordinator.

Home laundering of PPE is not permitted. Laundering will be provided at no cost to the employee. If the employee wishes to wear and maintain his/her own uniform or laboratory coat, then he/she would need to don additional employer-handled and employer-controlled PPE when performing tasks where it is reasonable to anticipate exposure to blood or other potentially infectious materials. Employees must wash up and change any contaminated clothing or PPE before leaving a work area.

If PPE fails to contain exposure to blood/body fluids, the employee should remove the contaminated protective equipment and clothing. Exposed skin or mucous membranes should be washed and cleaned thoroughly. Employees should then follow post-exposure evaluation and follow-up procedures.

a) Gloves

1) Supervisors are responsible for providing appropriate gloves in all areas where blood/body fluids are handled.

2) Disposable gloves such as surgical or examination gloves must be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised. These will be replaced as needed at no cost to the employee.

3) Disposable gloves should not be washed or decontaminated for re-use.

4) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

5) Hypoallergenic gloves, synthetic (non-latex) gloves, glove liners, and powderless gloves are available for use in any area of Tulane University requiring the use of gloves.

6) Hand washing or using a waterless hand cleaner after glove removal is required.
7) Gloves must be used where there is reasonable anticipation of employee hand contact with blood, other potentially infectious materials (OPIM), mucous membranes, or non-intact skin; when performing vascular access procedures; or when handling or touching contaminated surfaces or items.

8) Plastic film food handling gloves are not considered appropriate for use in exposure-related tasks.

b) **Masks, Eye Protection, and Face Shields**

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shield, must be worn whenever splashes, spray, spatter, or droplets of blood or other infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

c) **Gowns, Aprons, Lab coats, or Other Protective Body Clothing**

1) Supervisors are responsible for providing various sizes of appropriate clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments for employees to wear in all occupational exposure settings. The type and characteristics will depend on the task and degree of exposure anticipated.

2) Fabric lab coats are not impervious to blood and OPIM and should not be used as personal protective equipment. However, lab coats should be available and should be worn over street clothes while working in the clinical or laboratory areas. Lab coats should be removed before leaving laboratory areas.

3) Non-disposable gowns, aprons, or protective clothing used as personal protective equipment must be laundered by TU at no cost to the employee. Contaminated protective clothing must not be taken home to be laundered.

4) Employees must evaluate the task and the type of exposure anticipated and, based upon the determination, select the appropriate protective clothing which would resist penetration.

5) Shoes constructed of solid leather or equivalent material that tends to shed liquid and completely enclose the foot are recommended for work involving possible bloodborne pathogen exposure.

d) **Respiratory Equipment** is readily available and accessible to employees who can reasonably be expected to perform resuscitation procedures. Only trained personnel should use this equipment.

4. **Housekeeping**

a) Contaminated work surfaces should be decontaminated with an EPA approved disinfectant (BBP Appendix 8) after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.

b) Contaminated instruments shall be decontaminated after completion of procedures with an EPA approved disinfectant (BBP Appendix 8) and autoclaved when necessary.
c) Protective coverings, such as plastic wraps, aluminum foil, imperviously-backed absorbent paper, or other materials used to cover equipment or work surfaces should be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the work shift if they become contaminated during the shift.

d) All bins, pails, trash cans, and similar receptacles intended for re-use which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials must be inspected daily and cleaned and decontaminated immediately or as soon as feasible when visibly contaminated.

e) Broken glassware which may be contaminated should not be picked up directly with the hands. Broken glass should be removed by mechanical means such as a brush and dust pan, tongs, or forceps while wearing gloves.

f) Reusable sharps that are contaminated with blood/body fluids should not be stored or processed in a manner that requires employees to manipulate these sharps by hand or reach by hand into the containers where these sharps have been placed.

g) Regulated Waste

1) Employees shall dispose of regulated medical waste or OPIM in containers which are: closable; constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping; labeled as biohazard or color-coded as indicated in this Exposure Control Plan; and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping. If outside contamination of the regulated waste container occurs, it must be placed in a secondary container with the same specifications as stated for the primary container.

2) Regulated medical waste or OPIM waste generated at the TU will be appropriately disposed of in accordance with federal, state, and local regulations.

3) Contaminated sharps should be discarded immediately or as soon as feasible in containers that are: closable; puncture resistant, leak-proof on sides and bottom, and labeled as biohazard and color-coded as indicated in this Exposure Control Plan. Self-sheathing needle products must be disposed of in a proper sharps container. The needle sheath is not to be considered a “waste container.”

4) Sharps containers should be maintained in an upright position as close as feasible to where sharps are used or can reasonably be anticipated to be found (e.g., laundry area).

5) Sharps containers must be replaced when the container is 2/3 full. Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

6) When transporting or moving sharps containers from the area of use, the sharps container should be closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping. If sharps are protruding from the mouth of the container, never manipulate the sharps by hand. Place the container on a surface where you can have complete visualization of the mouth of the container, then use an intermediate instrument (i.e., forceps) to manipulate or remove the sharps so the container can be closed and sealed. Sharps containers should be placed in a second container with a biohazard symbol (BBP Appendix 2) that is puncture resistant, leakproof, and closable.

h) Laundry
1) Laundry personnel are responsible for ensuring that contaminated PPE is properly laundered, cleaned, or disposed. This must be provided at no cost to the employee with the individual department accepting the necessary charges. Contaminated PPE must be properly laundered even when performed by any outside laundry facility.

2) Employees who have contact with contaminated laundry must follow the Standard Precautions Policy (BBP Appendix 1) and wear appropriate PPE.

3) Contaminated laundry should be handled as little as possible with a minimum of agitation. It should be bagged where it is used and should not be sorted or rinsed in the location of use.

4) Contaminated laundry that is shipped off-site will be placed and transported in appropriate bags that are labeled with the biohazard symbol and that prevent liquid seepage when such a potential exists.

5) Any problems concerning laundry can be forwarded to the linen room (part of Materials Management) downtown at (504) 988-5109, uptown at (504) 865-5211, or TNPRC at (985) 871-6210.

D. Hazard Communication

1. A biohazard symbol should be affixed to containers of regulated waste; refrigerators and freezers containing blood/body fluids; and other containers used to store, transport, or ship blood/body fluids. BBP Appendix 2 shows a typical biohazard symbol that should be used to label the above mentioned containers. The biohazard symbol should be fluorescent orange or orange-red or predominantly so, with letters and symbol in contrasting color. Biohazard symbols should be affixed as close as feasible to the container by methods that prevent their loss or unintentional removal.

2. Red bags or red containers may be substituted for the biohazard labels.

3. Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion, administration, or other clinical use are exempt from biohazard labeling requirements.

4. Individual containers of blood/body fluids that are placed in a labeled container during storage, transport, shipment or disposal are exempt from the biohazard labeling requirements.

5. Contaminated equipment should also have a biohazard symbol affixed to it and should state which portions of the equipment remain contaminated. Contaminated equipment that is to be repaired, returned to vendor, calibrated, loaned to another person, or disposed of must be properly decontaminated before doing so.

E. HBV Vaccination

Hepatitis B vaccine and vaccination series is available free of charge to all employees in high-risk positions. Antibody tests (conducted by an accredited laboratory) and additional doses of vaccine, if indicated, are also available at no cost to high risk employees. Hepatitis B vaccine will be made available after the employee has completed Bloodborne Pathogen training and within 10 days of initial assignment to an at-risk position.

1. Hepatitis B vaccine is made available to all employees who have occupational exposure unless the employee has proof that he/she has previously received the complete hepatitis B vaccination series, or antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons. Employees who refuse HBV vaccination must document this in the records filed at the OEHS. (BBP Appendix 5, Form 27F-OEHS)
2. Prescreening for hepatitis B antibody activity is not a prerequisite for receiving the hepatitis B vaccine.

3. If the employee initially refuses the hepatitis B vaccine but decides to receive the vaccine at a later date, the hepatitis B vaccine will be provided at that time free of charge.

4. Hepatitis B antibody testing following immunization (free of charge to high risk employees) to determine an employee's antibody level is recommended by the CDC for employees who have ongoing contact with patients or blood and are at ongoing risk for injuries with sharp instruments or needlesticks. It is available to these employees one to two months after the completion of the three-dose vaccination series or upon request. At hire, if requested, antibody tests are offered to employees who have had the vaccine series previously. If the employee is a nonresponder to the HBV vaccine after the initial vaccination series, they are then offered a second three-dose vaccine series and retested. Employees who are still non-responders are offered a medical evaluation. Periodic antibody tests thereafter are not currently recommended.

5. Campus-specific information:
   a) **TUHSC and the Uptown campus employees:** Hepatitis B vaccine for at-risk employees will be provided free of charge to the employee at a Tulane University approved provider. The employee’s department will be responsible for accepting the cost of the hepatitis B vaccine from the Tulane University approved provider as well as charges for antibody titer testing, and all other costs relating to hepatitis B vaccination as described by the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030 BBP Appendix 3). Employees encountering any obstacles in obtaining the hepatitis B vaccine or any associated testing described in this section should immediately contact the Bloodborne Pathogens Coordinator at (504) 988-6608 for assistance.
   b) **TNPRC:** The hepatitis B vaccine is available for high-risk employees from the Occupational Health Nurse in Auxiliary Building 5. Employees should call in advance to set up an appointment at (985) 871-6475 or (985) 871-6596.

F. Post-Exposure Evaluation

Post-exposure evaluation and follow-up for an occupational bloodborne pathogens exposure are free of charge to the employee. All laboratory tests will be conducted by an accredited laboratory at no cost to the employee. All medical evaluations and follow-up procedures will be performed by or under the supervision of a licensed healthcare professional in accordance with the recommendations from the U.S. Public Health Service and Centers for Disease Control (BBP Appendix 10). In no instance should report completion and medical evaluation be delayed for occupational bloodborne exposures.

1. If an occupational exposure should occur:
   a) **TUHSC and Uptown Campus employees:**

   1) **CLEANSE:** Following a bloodborne exposure incident, the employee is to immediately wash skin with soap and water or flush mucous membranes with water when such areas have had contact with blood or other potentially infectious materials.

   2) **NOTIFY:** The employee who has sustained an exposure incident is to report such incident to his or her supervisor as soon as possible. The supervisor will assist the employee in contacting the bloodborne pathogens coordinator [available 24 hours a day at (504)419-1391].
3) **REPORT COMPLETION:** Following an exposure incident, a “First Report of Occupational Injury/Illness Form” and the “Information Provided to the Evaluating Healthcare Provider Form” should be completed by the employee in consultation with the supervisor. The employee is responsible for bringing these forms to the evaluating healthcare provider when reporting for a bloodborne pathogens injury. Through direct input by the employee, the evaluating healthcare provider is best able to understand exactly what exposure occurred and therefore direct treatment appropriately. These forms are available on the Tulane web at:

http://tulane.edu/oehs/training/bloodbornepathogen.cfm

4) **MEDICAL EVALUATION:** The employee should seek medical attention with the assistance of the BBP Coordinator. The BBP Coordinator can be reached 24 hours a day at (504) 419-1391. It must be realized that any bloodborne pathogens exposure incident is an event for which immediate attention must be sought, as the effectiveness of prophylaxis depends on the immediacy of its delivery. All employees are instructed to seek medical attention in the same manner that it would be sought should any occupational injury occur (e.g., emergency room, physician's office, urgent care clinic). However, it is highly recommended that if on rotation at a medical facility while working for Tulane University that you report to the employee health department or the emergency department of the healthcare facility where the injury occurred for initial evaluation. Usually, these departments are equipped to handle bloodborne exposures for injuries sustained at their facility and should have the easiest access to obtaining the source blood lab results which is necessary in evaluating the post-exposure prophylaxis that might be recommended. You should inform the healthcare provider that you are employed by Tulane University. The Tulane’s Workers’ Compensation Specialist can be reached by email workcomp@tulane.edu or phone (504) 988-2869 for further instructions about billing.

b) **TNPRC:** All bloodborne exposures should be reported to the occupational health nurse in Auxiliary Building 5 (Occupational Health Clinic) so that confidential medical evaluation and/or treatment can be provided. If the injury is severe the nurse can be reached at TNPRC extension #6600. The nurse will decide if it is necessary to call 911 in the event of an emergency situation. After hours, the nurse is on call 24/7 and may be reached at (985) 966-6515 on weekends or on 2nd or 3rd shift. The nurse will make appropriate referrals to ensure employee safety and medical care. Injured employees must complete a First Report of Injury form in the nurse’s office within 24 hours of the incident or as soon as is practical after receiving treatment. If an occupational exposure should occur:

1) Following a bloodborne exposure incident, the employee is to immediately wash any skin with soap and water or flush mucous membranes with water when such areas have had contact with blood or other potentially infectious materials. The employee who has sustained an exposure incident is to report such incident to his or her supervisor as soon as possible and complete a “First Report of Occupational Injury/Illness Form” (BBP Appendix 6). All bloodborne exposures should be reported to the occupational health nurse in Auxiliary Building 5 (Occupational Health Clinic) so that confidential medical evaluation and/or treatment can be provided.

2) Employees suffering a potential Herpes B-virus exposure should refer to BBP Appendix 12; TNPRC Policy # 5.3 for instructions following exposure.

3) Employees suffering a potential SIV exposure should refer to BBP Appendix 13; TNPRC Policy # 5.4 for instructions following exposure.
2. The injured employee shall receive counseling with regards to the occupational injury, risk of bloodborne infections, and available medical treatments. Post-exposure counseling must be consistent with the current U.S. Public Health Service Guidelines (BBP Appendix 10).

3. Documentation of the route of occupational exposure and circumstances under which the incident occurred should be done using the First Report of Occupational Injury and Illness Form (BBP Appendix 6) and/or the Information Provided to the Evaluating Healthcare Provider Form (BBP Appendix 9). If known, the individual source should be identified and documented.

   a) The source individual's blood should be tested as soon as possible after consent is obtained in order to determine HBV, HCV, and HIV infectivity.

   b) When the source individual is already known to be infected with HBV, HCV, and/or HIV, testing the source individual's HBV, HCV, or HIV status need not be repeated.

   c) Results of the source individual's testing shall be made available to the exposed employee. The exposed employee should be informed of the requirements of disclosure and confidentiality of the identity and infectious status of the source individual.

4. All treatment will adhere to the CDC’s postexposure monitoring and prophylaxis treatment guidelines for all bloodborne pathogens exposures. Medical evaluation and prophylaxis will be given immediately or as soon as possible after exposure (BBP Appendix 10).

5. The exposed employee's blood should be collected and tested as soon as possible after consent is obtained. If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample should be preserved for at least 90 days. If within 90 days of the occupational exposure the employee chooses to have the baseline sample tested, the testing should be done as soon as possible. Employees have 90 days to decide if they want HIV antibody testing. Reportable diseases will be reported as indicated by state law and U.S. Public Health Service requirements (Appendix 11 - Reportable Disease List - State of Louisiana).

6. The healthcare professional evaluating an employee after an occupational exposure shall be provided with the following: a copy of OSHA’s Bloodborne Pathogens Standard (BBP Appendix 3) and the “Information Provided to the Evaluating Healthcare Provider Form” which includes a description of the exposed employee's duties as they relate to the exposure incident, documentation of route(s) of exposure and circumstances under which exposure occurred, results of source individual's blood testing if available, and all medical records relevant to the appropriate treatment of the employee including vaccination status which are the employee's responsibility to maintain.

7. The employee will be provided with notification of the treating healthcare professional's opinion within fifteen (15) days after the medical evaluation. A written copy of the healthcare professional’s opinion will be made available to the employee within fifteen (15) days after the medical evaluation.

   a) All other findings or diagnoses excluding the following two should remain confidential and not be included in the written report:

      1) the written opinion in relation to the hepatitis B vaccine should be limited to and include whether the vaccine is indicated or if the employee has received the vaccine previously.

      2) the written opinion in relation to the post-exposure evaluation and follow-up should be limited to and include that the employee was informed of the evaluation results and that the employee was informed of any medical condition resulting from the exposure to blood/body fluids which will require further medical evaluation or treatment.
G. Recordkeeping

1. Medical Recordkeeping

   a) Medical recordkeeping shall include: name and social security number of employee; copy of the employee's HBV vaccination status including dates of all HBV vaccines and any medical records relative to employee's ability to receive the vaccine; results of all exams, medical testing, and follow-up procedures; a copy of the healthcare professional's written opinion; a copy of the information provided to the healthcare professional; post-exposure prophylaxis; counseling record; and the evaluation of reported illness.

   b) Confidential records shall not be disclosed or reported to any person within or outside the workplace (except as required by law) without the employee's express written consent. Records will be maintained for duration of employment plus 30 years. Post-exposure records will be maintained confidentially by the OEHS Bloodborne Pathogens Coordinator and/or at the treating healthcare facility.

2. Training/Education

   a) All employees with the potential for occupational exposures will be provided training/education on methods of preventing nosocomial transmission of bloodborne pathogens at no cost to the employee. The training will be provided during working hours by a competent person knowledgeable in the area of bloodborne pathogens, or through Tulane’s computerized training program (http://tulane.edu/ohs/training/bbptrainingcourse.cfm). Training material appropriate in content and vocabulary to educational level, literacy, language of employees, and appropriate to assigned duties will be used.

   b) Training will be provided as follows:

      1) at the time of initial employment and assignment to job tasks where occupational exposure may occur

      2) as soon as possible for all existing employees

      3) within one year of the employee's previous training and annually thereafter (training shall be provided either on the OEHS website at http://tulane.edu/ohs/training/bbptrainingcourse.cfm or in-service)

      4) when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's potential for occupational exposures, and as new standards for safe work practices evolve.

   c) At minimum, training shall include:

      1) an explanation of the OSHA Bloodborne Pathogens Standard and contents

      2) the epidemiology of HIV HCV, and HBV infection within the U.S. with emphasis on healthcare workers

      3) signs, symptoms, and incubation periods of HIV, HBV, and HCV infections

      4) modes of transmission of HIV, HBV, and HCV pathogens

      5) an explanation of the Exposure Control Plan, how to obtain the plan

      6) methods for recognizing tasks or procedures that may involve exposure to blood/body fluids
7) an explanation of the Standard Precautions Policy
8) explanation of selection, usage, and limitations of methods to reduce exposure including appropriate engineering controls, work practices, and personal protective equipment
9) location, usage, handling, and disposal of personal protective equipment
10) discussion of the efficacy, safety, administration, and benefits of the HBV vaccine and its availability to employees without charge
11) actions to take and persons to contact in an emergency involving blood/body fluids, procedures for exposure incidents, methods of reporting, and provision of medical follow-up
12) information on post-exposure evaluation and follow-up
13) explanation of the biohazard symbol, color coding, and corresponding requirements
14) opportunity for interactive discussion and answers session and/or directions for contacting the BBP Coordinator to answer any questions.

d) Bloodborne Pathogen education/training will be recorded by OEHS. Records for training compliance will be maintained by the BBP Coordinator. Supervisors, department heads, and unit managers are responsible for ensuring that all their at-risk employees receive an annual in-service on bloodborne pathogens. Bloodborne Pathogen education/training records will be maintained for at least three years from the date on which the training occurred. In addition to authorized management personnel, employee training records shall be provided upon request for examination and copying to the subject employee, to anyone having the subject employee's written consent, and to the director and assistant secretary of the Occupational Safety and Health Administration.

H. HIV and HBV Research Laboratories and Production Facilities

This section refers to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissue, and organs. These requirements apply in addition to the other requirements of this Exposure Control Plan.

1. The research labs and production facilities must meet the following criteria:
   a) Standard microbiological practices (BBP Appendix 14). All regulated waste from work areas and from animal rooms must be incinerated or decontaminated by a method such as autoclaving known to be effective in destroying bloodborne pathogens.
   b) Special Practices.

1) Laboratory doors must be kept closed when work involving HIV or HBV is in progress.

2) Contaminated materials that are to be decontaminated at a site away from the work area must be placed in a durable, leak-proof labeled or color-coded container that is closed before being removed from the work area.
3) Access to the work area must be limited to authorized persons. Only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures will be allowed to enter the work areas and animal rooms.

4) When potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol (BBP Appendix 2) must be posted on all access doors.

5) All activities involving potentially infectious materials must be conducted in biological safety cabinets or other physical containment devices within the containment module. No work with potentially infectious materials shall be conducted on the open bench.

6) Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing must be used in the work area and animal rooms. Protective clothing must not be worn outside of the work area and must be decontaminated before being laundered.

7) Special care must be taken to avoid skin contact with potentially infectious materials. Gloves must be worn when handling infected animals and when hand contact with infectious materials is unavoidable.

8) The supervisor must ensure that vacuum lines are protected with liquid disinfectant traps and HEPA filters or filters of equivalent or superior efficiency and that these are checked routinely and maintained or replaced as necessary.

9) Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) are to be used for the injection or aspiration of potentially infectious materials. Extreme caution must be used when handling needles and syringes. A needle must not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe must be promptly placed in a puncture resistant container and autoclaved or decontaminated before reuse or disposal.

10) All spills must be immediately contained and cleaned by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials. Contact the Office of Environmental Health & Safety for assistance at (504)988-5486.

11) A spill or accident that results in an exposure incident must be immediately reported to the laboratory supervisor and/or director and the Office of Environmental Health & Safety (504) 988-5486.

12) A biosafety plan, issued from the Office of Biosafety, is reviewed and updated at least annually and advises personnel of potential hazards. Employees must read these instructions on practices and procedures and follow them.

c) Containment Equipment

1) Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, must be used for all activities with infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.
2) Biological safety cabinets must be certified when installed, whenever they are moved, and at least annually by the Office of Environmental Health & Safety.

2. Each HIV and HBV research laboratory must contain a facility for hand washing and an eyewash facility which is readily available within the work area, and must have available an autoclave for decontamination of regulated waste.

3. HIV and HBV production facilities must meet the following criteria:
   a) The work areas must be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors must be the basic requirement for entry into work area from access corridors or other contiguous areas. Physical separation of the high containment work area from access corridors or other areas or activities may also be provided by a double-door clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.
   b) The surfaces of doors, walls, floors, and ceilings in the work area must be water resistant so that they can be easily cleaned. Penetrations in these surfaces must be sealed or capable of being sealed to facilitate decontamination.
   c) Each work area must contain a sink for washing hands and a readily available eyewash facility. The sink must be foot, elbow, or automatically operated and must be located near the exit door of the work area.
   d) Access doors to the work area or containment module must be self-closing.
   e) An autoclave for decontamination of regulated waste must be available within or as near as possible to the work area.
   f) A ducted exhausted-air ventilation system must be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air must not be recirculated to any other area of the building, must be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

4. Initial training requirements for employees in HIV or HBV research laboratories or production facilities, in addition to those outlined previously in this Exposure Control Plan, include:
   a) Employees must demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.
   b) Employees must have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.
   c) Employees who have no prior experience in handling of human pathogens must undergo a training program. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. Employees can participate in work activities involving infectious agents only after proficiency has been demonstrated.
   d) It is the supervisor's responsibility to see that their employees have the initial training, experience and proficiency required in order to work in a HIV or HBV research laboratory or production facility.

Note: Any employees who work with non-human primates (monkeys, monkey tissue, or monkey specimens) may have the potential for contracting B virus. Such employees must review and follow the policies outlined in the most current CDC Recommendations for Prevention of and Therapy for Exposure to B Virus. (BBP Appendix 15)
This plan and all appendices were approved by the Control of Occupational Exposures Committee (COEC) on 3-28-2011. This plan and all appendices were approved by the Tulane Operations Committee on 5-9-2011. This plan and all appendices were approved by the Tulane Policy Committee on 10-31-2011.
BBP APPENDIX ITEMS

SEE, PAGES 2-3 OF THIS SECTION FOR A COMPLETE LIST OF BBP APPENDIX ITEMS.
SOME ITEMS ARE REFERENCES TO WEBSITES OR OTHER SOURCES.

ITEMS LOCATED IN THE FOLLOWING PAGES:

BBP APPENDIX ITEMS: 1, 5, 6, 10, 13, 14
APPENDIX 1

STANDARD PRECAUTIONS POLICY

A. Purpose

Medical History and examination cannot readily identify all persons infected with HIV, HBV, HCV or other bloodborne pathogens; therefore, all employees or students should routinely use appropriate barrier precautions to prevent parenteral, mucous membrane, and non-intact skin exposure when contact with blood or body fluids of any person is anticipated. Healthcare workers and research lab workers are at an increased risk of contracting HIV/HBV/HCV. However, all personnel in the workplace may be exposed to HIV/HBV/HCV and need to be familiar with protective measures. The purpose of this policy is to provide guidelines to decrease the risk of occupational exposure to blood or body fluids. At the present time the precautions for HIV, HBV, HCV and other bloodborne infections are identical and are known as “Standard Precautions”. Standard Precautions are a system of infection control which assumes that every direct contact with body fluids is infectious and requires every employee or student exposed to direct contact with body fluids to be protected as though such body fluids were infected with a bloodborne pathogen. Standard Precautions are adequate protection against bloodborne infections from both humans and animals. The following policies are based on current Centers for Disease Control and Preventions (CDC) recommendations and Occupational Safety and Health Administrations (OSHA) requirements and are subject to change as medical knowledge, advances, and legal issues dictate.

In this document an employee is defined as any personnel, including students of Tulane University, whose work involves direct or potential contact with body fluids, or tissues from living individuals, animals, or corpses.

B. Guidelines

1. Handwashing
   a. Hands should be washed before, after, and between contact with persons and after touching intimate objects likely to be contaminated by blood and body fluids.
   b. Hands should be washed after removing gloves.
   c. Hands should be washed as soon as possible if contaminated with blood or body fluids.
   d. Hands should be washed with soap under running water for 15-30 seconds using vigorous mechanical friction.
   e. When handwashing facilities with soap dispensers are not available, an alcohol based antiseptic hand cleaner can be used. When this is used, hands should be washed as soon as feasible.

2. Gloves - the use of gloves will vary according to the procedure involved. The use of disposable gloves is indicated for procedures where blood or body fluids are handled. Gloves will be made available and usage encouraged for all phlebotomy procedures.
   a. Gloves should be worn in the following circumstances:
      1) If the worker has cuts, abraded skin, chapped hands, dermatitis, or other breaks in skin
2) During instrumental examination of oropharynx, gastrointestinal tract, and genitourinary tract

3) During invasive procedures

4) During cleaning of body fluids and decontaminating procedures

5) Performing finger and/or heelsticks on infants and children

6) Persons receiving training in phlebotomy

7) If workers judges that hand contamination with blood may occur

8) During contact with mucous membranes

b. Gloves should be worn when handling soiled linen

c. Gloves should be changed after contact with each person when body fluids are present and between clean and dirty procedures.

d. Gloves should be worn for collecting specimens, and working with blood, body fluids, or contaminated tissue cultures.

e. Gloves must be of appropriate material, usually intact latex or vinyl, of appropriate quality and size for the procedures performed.

f. Gloves should be replaced if they are peeling, cracked, or discolored, or if they have punctures, tears, or other evidence of deterioration.

3. Gowns/Apron

a. Fluid-resistant or fluid-proof gowns/aprons should be worn during procedures that are likely to generate splashes of blood or body fluids to skin or clothing.

b. Gowns, including surgical gowns, should be made of, or lined with, fluid-proof or fluid-resistant material and should protect all areas of exposed skin. Sleeves of gowns should extend to the wrist.

4. Masks

a. Masks should be worn during procedures that are likely to generate droplets of blood or body fluids to mucous membranes of the mouth or nose.

b. Masks should be worn if there is sustained contact with a person who is coughing extensively

c. Masks should be used only once for a single patient contact, unless manufacturer states differently.

d. Masks should be removed prior to exiting the patient's room and discarded in the infectious waste.
e. Special respirator masks must be worn when coming in contact with patients with suspected Tuberculosis. (Refer to Tulane’s Tuberculosis Exposure Control Policy.)

5. Protective Eyewear, Goggles, or Face Shields
   a. Protective eyewear (with brow guard and side shields), goggles, and/or face shields should be worn during procedures that are likely to generate droplets of blood or body fluids to prevent exposure to mucous membranes of the eyes.
   b. Protective eyewear should be removed prior to leaving the work area and decontaminated as necessary by the individual using the eyewear.

6. Face Shield- chin-length face shields can be worn in place of protective eyewear and masks during procedures that are likely to generate splashes of blood or body fluids to the face.

7. Surgical Caps or Hoods and/or Shoe Covers or Boots- surgical caps or hoods and/or shoe covers or boots should be worn in instances when gross contamination can reasonably be anticipated. These should be discarded in appropriately designated receptacles after use.

8. Needles/Sharps Precautions
   a. All employees or students should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures, or when handling, cleaning or disposing of these items.
   b. Needles should not be recapped/resheathed, purposely bent or broken by hand, removed from disposable syringes, or otherwise manipulated by hand.
   c. Resheathing instruments, self-sheathing needles, or forceps can be used to prevent recapping needles by hand.
   d. Needles and syringes, scalpel blades, and other sharp objects should be placed in a puncture-resistant container having a biohazard label.
   e. Reusable sharps should be placed in a puncture-resistant container for transport to the reprocessing area.
   f. Needles and sharp objects should not be thrown in the trash or left in bedding
   g. Needles should not be used for secondary intravenous lines. Needleless or luerlock closed systems are encouraged.
   h. Puncture resistant containers with the biohazard label should be replaced when the container is 2/3 full. Needles, sharps, or instruments should never be manipulated once placed in the puncture resistant container.
   i. Whenever possible, it is encouraged that technologies and practices that reduce or eliminate the use of sharp implements by replacing them with safer technologies and practices (example: catheter securement devices) are implemented. Primary prevention is the most direct method of preventing needlestick injuries. By eliminating the sharp item, the risk is also eliminated.
9. Resuscitation Equipment
   a. Resuscitation is the right of all persons who have not asked that resuscitative measures not be taken.
   b. Mouth pieces, resuscitation bags, or other ventilation devices should be readily available to minimize the need for emergency mouth-to-mouth resuscitation.
   c. Gowns/aprons, gloves, protective eyewear, and masks should be readily available on all code/crash carts for emergency resuscitation procedures.

10. Handling of Specimens
    a. Gloves should be worn when collecting and processing body fluid specimens.
    b. Specimens should be placed in a well-constructed container with a secure lid. This container should be placed inside an impervious bag having a biohazard label for transport.
    c. Double bagging is not required unless the outside of the first bag is contaminated or torn. A secondary bag or container is needed if there is a potential for puncturing or contaminating a primary container.
    d. Clean gloves should be used for transporting specimens. Hands should be washed after removing gloves.
    e. All specimens transported via the pneumatic tube system should be placed in a sealed plastic bag or secondary closable puncture resistant container. Each pneumatic tube should have a clean plastic transport bag for specimen transport.

11. Cleaning Spills of Blood or Body Fluids
    a. Gloves should be worn to clean spills of blood or body fluids.
    b. In any patient care area, the visible blood or body fluid should first be removed with an absorbent disposable material, then the area should be decontaminated with an EPA approved disinfectant and allowed to air dry.
    c. In the laboratory, (spills of cultured or concentrated agents, blood or body fluids) the contaminated areas should be covered with absorbent towels and then flooded with a liquid EPA approved disinfectant. The area should then be cleaned with an absorbent disposable material. Then the area should be disinfected again after cleaning and allowed to air dry.

12. Room Assignment- HIV positive patients with undiagnosed respiratory infections are to be placed in a private room if available.

13. Pregnant Employees or students
    a. Pregnant employees or students are not known to be at greater risk of contracting HIV, HBV, HCV or other bloodborne infections than employees or students who are not pregnant.
b. It is the pregnant employee or student’s responsibility to be especially familiar with and strictly adhere to standard precautions to minimize the risk of bloodborne disease transmission to themselves and their fetus.

14. Reusable Equipment
   a. Standard sterilization and disinfection procedures currently used for hepatitis B are adequate to sterilize or disinfect instruments, devices, or other items contaminated with body fluids.

15. Linen
   a. Gloves should be worn when handing soiled linen.
   b. Linen soiled with body fluids should be handled as little as possible and with minimum agitation.
   c. Linen should be bagged at the location where it was used.
   d. Linen should not be sorted or rinsed in patient care areas.
   e. Infectious linen should be placed in appropriate bag.
   f. Soiled linen should be placed in appropriate bag.

PRECAUTIONS FOR SPECIFIC AREAS/PROCEDURES

A. Precautions for Invasive Procedures

1. Invasive procedure is defined as any surgical or other diagnostic or therapeutic procedure involving manual or instrumental contact with or entry into any blood, body fluids, cavity, internal organ, subcutaneous tissue, mucous membrane or percutaneous wound of the human body.

2. Standard Precautions Guidelines should be practiced.

3. All workers who participate in invasive procedures should routinely use appropriate barrier precautions to prevent skin and mucous membrane exposures to blood or body fluids.

4. Gloves and surgical masks should be worn for all invasive procedures.

5. Protective eyewear or face shields should be worn for procedures that commonly result in the generation of droplets, splashing of blood or body fluids, or the generation of bone chips.

6. Gowns or aprons should be worn during invasive procedures that are likely to result in the splashing of blood or other body fluids.

7. Gloves should be changed when heavy external soiling occurs.

8. Gloves should be checked periodically during the procedure for defects, cuts, or holes and changed as needed.

9. Double gloving should be done if the surgeon has cuts, abrasions, or dermatitis.
10. If a glove is torn or a needlestick injury occurs, the glove should be removed and a new glove donned as promptly as the individual's safety permits. The needle or instrument involved should also be removed from the sterile field immediately.

11. Employees or students who perform or assist in vaginal or cesarean deliveries should wear gloves and gowns when handling the placenta or infant until blood or amniotic fluid has been removed from the infant's skin, and should be worn during post-delivery care of the umbilical cord.

12. It is recommended that all sharps and needles utilized should not be passed hand to hand but should be passed via an intermediate tray or basin.

13. Consideration should be given to the use of blunt tip needles when possible.

B. Precautions for Laboratories

1. Standard Precautions Guidelines should be practiced.

2. All specimens of blood and body fluids should be put in a well-constructed container with a secure lid, then placed in an impervious bag or secondary container to prevent puncture if necessary prior to transport.

3. Gloves should be used for processing all body fluids specimens.

4. Gloves should be changed and hands washed after completion of specimen processing.

5. Masks and protective eyewear (with brow bar and side shield) should be worn if mucous membrane contact with blood or body fluids is likely.

6. Mechanical pipetting devices should be used for manipulating all liquids in the laboratory. Mouth pipetting should not be done.

7. Use of needles and syringes should be limited to situations in which there is no alternative.

8. Laboratory gowns, coats, or aprons should be worn while working with potentially infectious materials and should be removed/discarded appropriately before leaving the laboratory.

9. All procedures and manipulations of potentially infectious material should be performed carefully to minimize the creation of droplets and aeronization of fluids.

10. Equipment that has been contaminated with blood and body fluids should be decontaminated and cleaned before being repaired in the laboratory or transported to the manufacturer. If an area of equipment remains contaminated, a biohazard label should be applied describing the area of and type of contamination.

11. Contaminated equipment should be decontaminated before reprocessing or placed in a plastic bag to be sent for reprocessing.

12. Biological Safety Cabinets (Class I or II) and other primary contaminated devices should be used whenever procedures are conducted that have a high potential for generating droplets such as blending, sonicating, and vigorous mixing.
C. **Precautions for Postmortem Procedures**

1. Standard Precautions Guidelines should be practiced.

2. All persons performing or assisting in postmortem procedures should wear gloves, masks, protective eyewear, water-proof gowns, and/or aprons, and impervious shoe coverings or boots.

3. Instruments and surfaces contaminated during postmortem procedures should be decontaminated with an EPA approved hospital disinfectant.

4. Postmortem procedures should use techniques to avoid or minimize aerosol distribution of contaminants.

5. Respirator masks should be used for any postmortem procedure done on persons or animals with possible TB.

D. **Precautions for Dialysis**

1. Standard Precautions Guidelines should be practiced.

2. An individual dialyzer should never be used on more than one patient.

3. Goggles and/or face shields should be worn when placing persons on and taking persons off dialysis.

4. The dialysis machine should be cleaned pre and post dialysis by rinsing with an approved disinfectant, letting it set for 15 minutes and then rinsing until clear.

E. **Precautions for Dentistry**

1. Standard Precautions Guidelines should be practiced.

2. Rubber dams, high speed evacuation, and proper positioning when appropriate, should be utilized to minimize generation of droplets and splatter.

3. Handpieces should be sterilized after use with each person, or at least flushed, the outside surface cleaned and wiped with an approved disinfectant.

4. Contaminated materials, impressions, and intra-oral devices should be cleaned and disinfected before being handled in the dental laboratory and before they are placed in a persons mouth.

F. **Environmental Precautions**

1. Linen soiled with blood and body fluids should be placed and transported in yellow plastic bags. If hot water is used, linen should be washed with detergent in water at least 71 C (160 F) for 25 minutes. If low temperature < 70 C (158 F) laundry cycles are used, chemicals suitable for low-temperature washing at proper use concentration should be used.

2. Cleaning and removal of soil should be done routinely. Environmental surfaces such as walls, floors, and other surfaces are not associated with transmission of infections to persons.

3. Cleaning of walls, blinds, and curtains is recommended only if they are visibly soiled.
4. Horizontal surfaces (e.g. bedside tables) in patient care areas should be cleaned on a regular basis, when soiling or spills occur, and when patient is discharged.

5. Disinfectant fogging is not recommended.

6. Trash contaminated with blood and body fluids should be double bagged and transported in red plastic bags.

7. Spills of blood or body fluid should be cleaned according to Standard Precautions Guidelines.

8. Reusable equipment soiled with blood or body fluids should have the gross amount of contamination cleaned, then placed in plastic bag for transport to decontamination.

9. Ambulatory care settings do not require separate examining rooms, waiting areas, or bathrooms for HIV positive persons, unless the presence of other infections require additional isolation.

10. Transportation of HIV positive patients does not require special precautions unless the presence of other infections require additional isolation.

G. **Biohazard Symbol**

1. A biohazard symbol should be affixed to containers of regulated waste, refrigerators and freezers containing blood or body fluids, and other containers used to store, transport, or ship blood or body fluids.

2. Biohazard symbol should be fluorescent orange or orange-red or predominantly so, with letters and symbol in contrasting color.

3. Red bags or red containers can be substituted for biohazard labels.

4. Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion, administration, or other clinical use are exempt from biohazard labeling requirements.

5. Individual containers of blood or body fluids that are placed in a labeled container during storage, transport, shipment, or disposal are exempt from labeling requirements.

6. Regulated waste that has been decontaminated need not be labeled.
DECLINATION FORM FOR HEPATITIS B VACCINE

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccine at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

I am declining the hepatitis B vaccine for the following reason:

___ I have already completed the hepatitis B vaccine series. I have been informed that I may request a titer test at no charge to me to confirm that I have sufficient antibody to hepatitis B.

___ I am declining due to medical or other personal reasons. I have been informed that I can choose to receive the hepatitis B vaccination series at no charge at a later time if I continue to work in an at-risk position.

______________________________________________
Printed Name

______________________________________________
Signature

______________________________________________
Date
**-CONFIDENTIAL-**

**Tulane University - First Report of Occupational Injury/Illness**

<table>
<thead>
<tr>
<th>1. Date of Report:</th>
<th>2. Date of Injury:</th>
<th>3. Normal Starting Time on Day:</th>
<th>4. Date Employee Return to Work:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. If Fatal injury, Give Date of Death:</th>
<th>6. Date Employer Knew of Injury:</th>
<th>7. Date Disability Began:</th>
<th>8. Last Full Day Paid-Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Print Employee:(First/Middle/Last)</th>
<th>10. Social Security Number</th>
<th>11. [ ] Male [ ] Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th></th>
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<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>22. Exact Location: (Building, floor, room number, etc. If off premises: street, address, city &amp; state)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>23. What Was The Employee Doing When injured? (Be specific. If using tools or equipment or handling material-name them and tell what he was doing with them).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24. How Did Injury Occur? (Describe fully the events which resulted in injury or disease. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to injury or disease).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did Injury or Illness Occur Because of: [ ]</th>
<th>25. Mechanical Defect [ ] Yes [ ] No (Describe Above)</th>
<th>26. Unsafe Act Defect: [ ] Yes [ ] No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>27. Nature and Location of injury or Disease (Describe fully, include parts of body affected):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>28. Attending Physician and Address (If Hospital involved indicate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>29. Employer: TULANE UNIVERSITY</th>
<th>30. Person Completing This Report:</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPTOWN</td>
<td></td>
</tr>
<tr>
<td>TUHS</td>
<td></td>
</tr>
<tr>
<td>TRPRC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>31. Employer's Address-Include Parish and Zip Code:</th>
<th>32. Employer's Telephone Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>33. Employer's Mailing Address-If Different Than Above:</th>
<th>34. Nature of Business-Type of Mfg., Trade, Construction, Service, etc.:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDUCATION AND HEALTH CARE SERVICES</td>
</tr>
</tbody>
</table>

**INSTRUCTIONS:**

- IF SERIOUS INJURY, ILLNESS OR DEATH OCCURS, CONTACT TULANE UNIVERSITY OFFICE OF ENVIRONMENTAL HEALTH & SAFETY AT 504-988-5486.
- IT IS IMPORTANT THAT ALL INFORMATION IS PROVIDED ON THIS FORM ON BOTH SIDES. BOTH SIDES OF FORM MUST BE COMPLETED!
- SEND IMMEDIATELY TO OEH - WORKER'S COMPENSATION, TULANE UNIVERSITY. STATE LAW REQUIRES IMMEDIATE REPORTING.

**DIRECTOR/SUPERVISOR NAME:**

**PHONE NUMBER:**

**DISTRIBUTION OF FORM:**

- Original to Tulane University, Env Health & Safety (Workers’ Comp Section) 1430 Tulane Ave, Bx TW16, New Orleans, LA 70112-2699, Worker's Comp. fax No. 504 988-2196 / Direct No. 504 988-2869; [ ] Employee's Supervisor [ ] Employee [ ] Health Care Provider (HCP).

#-Continued on reverse side-

**-CONFIDENTIAL-**

Bloodborne Pathogens / Appendix 5 - Page 1

Bloodborne Pathogens / Appendix 6 - Page 1
(Note: Complete the following by checking the appropriate blocks or filling in space provided below.)

### EVENT CODE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Falls, Slips, Trips (Off, On, Over)</td>
</tr>
<tr>
<td>102</td>
<td>Off chair, furniture</td>
</tr>
<tr>
<td>103</td>
<td>Off door, opening, excavation</td>
</tr>
<tr>
<td>104</td>
<td>Off ladder, scaffold</td>
</tr>
<tr>
<td>105</td>
<td>Off machinery, equipment</td>
</tr>
<tr>
<td>106</td>
<td>Off vehicle</td>
</tr>
<tr>
<td>107</td>
<td>Off high place</td>
</tr>
<tr>
<td>108</td>
<td>On stairs, steps-indoors</td>
</tr>
<tr>
<td>109</td>
<td>On other flat surfaces-indoors</td>
</tr>
<tr>
<td>110</td>
<td>On stairs, steps-outdoors</td>
</tr>
<tr>
<td>111</td>
<td>On paved surfaces-outdoors</td>
</tr>
<tr>
<td>112</td>
<td>On loose ground-cover-outdoors</td>
</tr>
<tr>
<td>113</td>
<td>On flat surfaces-outdoors</td>
</tr>
</tbody>
</table>

### NATURE OF INJURY CODE

#### Injury

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Amputation</td>
</tr>
<tr>
<td>102</td>
<td>Bite, sting</td>
</tr>
<tr>
<td>103</td>
<td>Bruise, contusion</td>
</tr>
<tr>
<td>104</td>
<td>Burn - hot, cold, chemical, scald</td>
</tr>
<tr>
<td>105</td>
<td>Concussion, unconscious</td>
</tr>
<tr>
<td>106</td>
<td>Cut, laceration</td>
</tr>
<tr>
<td>107</td>
<td>Exhaustion, heat stroke</td>
</tr>
<tr>
<td>108</td>
<td>Electric shock</td>
</tr>
<tr>
<td>109</td>
<td>Irritation, other</td>
</tr>
<tr>
<td>110</td>
<td>Exposure</td>
</tr>
<tr>
<td>111</td>
<td>Foreign body, sliver, dust etc.</td>
</tr>
<tr>
<td>112</td>
<td>Fracture, crush, dislocated</td>
</tr>
<tr>
<td>113</td>
<td>Internal injury, hernia, heart</td>
</tr>
<tr>
<td>114</td>
<td>Loss of senses, faculties</td>
</tr>
<tr>
<td>115</td>
<td>Puncture</td>
</tr>
<tr>
<td>116</td>
<td>Scrape, scratch, abrasion</td>
</tr>
<tr>
<td>117</td>
<td>Sprain, strain, torn</td>
</tr>
<tr>
<td>118</td>
<td>Suffocation, drowning</td>
</tr>
<tr>
<td>119</td>
<td>Dermatitis (skin rash)</td>
</tr>
<tr>
<td>120</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Illness

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Skin disease/disorder</td>
</tr>
<tr>
<td>202</td>
<td>Lung problem, dust related</td>
</tr>
<tr>
<td>203</td>
<td>Lung problem, toxic agent related</td>
</tr>
<tr>
<td>204</td>
<td>Poisoning</td>
</tr>
<tr>
<td>205</td>
<td>Disorders due to physical agent (other than toxic agents)</td>
</tr>
<tr>
<td>206</td>
<td>Disorders associated with repeated trauma</td>
</tr>
</tbody>
</table>

### PART OF BODY CODE

#### HEAD/NECK

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Scalp</td>
</tr>
<tr>
<td>302</td>
<td>Skull</td>
</tr>
<tr>
<td>303</td>
<td>Eyes (R/L Both)</td>
</tr>
<tr>
<td>304</td>
<td>Ears (R/L Both)</td>
</tr>
<tr>
<td>305</td>
<td>Face (R/L Both)</td>
</tr>
<tr>
<td>306</td>
<td>Nose</td>
</tr>
<tr>
<td>307</td>
<td>Mouth/Teeth</td>
</tr>
<tr>
<td>308</td>
<td>Neck</td>
</tr>
<tr>
<td>309</td>
<td>Whole Head</td>
</tr>
<tr>
<td>310</td>
<td>Other</td>
</tr>
</tbody>
</table>

#### Arm/Shoulder

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>Shoulder (R/L Both)</td>
</tr>
<tr>
<td>312</td>
<td>Upper Arm (R/L Both)</td>
</tr>
<tr>
<td>313</td>
<td>Elbow (R/L Both)</td>
</tr>
<tr>
<td>314</td>
<td>Forearm (R/L Both)</td>
</tr>
<tr>
<td>315</td>
<td>Wrist (R/L Both)</td>
</tr>
<tr>
<td>316</td>
<td>Hand (R/L Both)</td>
</tr>
<tr>
<td>317</td>
<td>Fingers (R/L Both)</td>
</tr>
<tr>
<td>318</td>
<td>Whole Arm (R/L Both)</td>
</tr>
</tbody>
</table>

#### Chest/Ribs

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Chest (R/L)</td>
</tr>
<tr>
<td>402</td>
<td>Ribs</td>
</tr>
<tr>
<td>403</td>
<td>Back</td>
</tr>
<tr>
<td>404</td>
<td>Muscles</td>
</tr>
<tr>
<td>405</td>
<td>Skeletal/Nervous</td>
</tr>
</tbody>
</table>

#### Abdomen

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>Abdomen</td>
</tr>
<tr>
<td>407</td>
<td>Groin</td>
</tr>
<tr>
<td>408</td>
<td>Hip (R/L Both)</td>
</tr>
<tr>
<td>409</td>
<td>Other</td>
</tr>
</tbody>
</table>

#### Buttocks

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>410</td>
<td>Buttocks</td>
</tr>
<tr>
<td>411</td>
<td>Whole Torso</td>
</tr>
</tbody>
</table>

#### Hip (R/L Both)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>412</td>
<td>Hip (R/L Both)</td>
</tr>
</tbody>
</table>

#### Leg

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>413</td>
<td>Thigh (R/L Both)</td>
</tr>
<tr>
<td>414</td>
<td>Knee (R/L Both)</td>
</tr>
<tr>
<td>415</td>
<td>Shin, Calf (R/L Both)</td>
</tr>
<tr>
<td>416</td>
<td>Ankle (R/L Both)</td>
</tr>
<tr>
<td>417</td>
<td>Foot (R/L Both)</td>
</tr>
<tr>
<td>418</td>
<td>Toe</td>
</tr>
<tr>
<td>419</td>
<td>Whole Leg (R/L Both)</td>
</tr>
<tr>
<td>420</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>501</td>
<td>Animal, insects, plants</td>
</tr>
<tr>
<td>502</td>
<td>Public transportation</td>
</tr>
<tr>
<td>503</td>
<td>Sports activity</td>
</tr>
<tr>
<td>504</td>
<td>Vehicle passenger, driver</td>
</tr>
<tr>
<td>505</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Contributing Environmental Factor Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sound level</td>
</tr>
<tr>
<td>2</td>
<td>Weather condition</td>
</tr>
<tr>
<td>3</td>
<td>Illumination</td>
</tr>
<tr>
<td>4</td>
<td>Working surface/facility layout condition</td>
</tr>
<tr>
<td>5</td>
<td>Flammable liquid/solid exposure</td>
</tr>
<tr>
<td>6</td>
<td>Chemical action/reaction exposure</td>
</tr>
<tr>
<td>7</td>
<td>Materials handling equipment/method condition</td>
</tr>
<tr>
<td>8</td>
<td>Gas/vapor/mist/fire/smoke/dust condition</td>
</tr>
<tr>
<td>9</td>
<td>Overhead moving/falling object action</td>
</tr>
<tr>
<td>10</td>
<td>Flying object action</td>
</tr>
<tr>
<td>11</td>
<td>Temperature above or below tolerance level</td>
</tr>
<tr>
<td>12</td>
<td>Radiation condition</td>
</tr>
<tr>
<td>13</td>
<td>Pinch point action</td>
</tr>
<tr>
<td>14</td>
<td>Catch point/puncture action</td>
</tr>
<tr>
<td>15</td>
<td>Shear point action</td>
</tr>
<tr>
<td>16</td>
<td>Squeeze point action</td>
</tr>
<tr>
<td>17</td>
<td>Overpressure/underpressure condition</td>
</tr>
<tr>
<td>18</td>
<td>Poor housekeeping</td>
</tr>
<tr>
<td>19</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Contributing Human Factor Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Misjudgement of hazardous situation</td>
</tr>
<tr>
<td>02</td>
<td>No personal protective equipment used</td>
</tr>
<tr>
<td>03</td>
<td>No special protective clothing/ appropriate attire</td>
</tr>
<tr>
<td>04</td>
<td>Malfunction of procedure for securing operation or warning of hazardous situation</td>
</tr>
<tr>
<td>05</td>
<td>Distracting actions</td>
</tr>
<tr>
<td>06</td>
<td>Equipment in use not appropriate for operation or process</td>
</tr>
<tr>
<td>07</td>
<td>Malfunction of neuro-muscular system</td>
</tr>
<tr>
<td>08</td>
<td>Malfunction of perception system with respect to task environment</td>
</tr>
<tr>
<td>09</td>
<td>Safety devices removed or inoperative</td>
</tr>
<tr>
<td>10</td>
<td>Operational position not appropriate for task</td>
</tr>
<tr>
<td>11</td>
<td>Procedure for handling materials not appropriate for task</td>
</tr>
<tr>
<td>12</td>
<td>Defective equipment in use</td>
</tr>
<tr>
<td>13</td>
<td>Malfunction of procedure for lock-out or tag-out</td>
</tr>
<tr>
<td>14</td>
<td>Procedure to complete task not appropriate</td>
</tr>
<tr>
<td>15</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Comments or Recommendations to Help Prevent Future Occurrences of Similar Problems:

Note: If more space is needed use an extra sheet of paper as an attachment.
APPENDIX 10

Information to be Provided to the Evaluating Healthcare Practitioner Form
(Routes and Circumstances of Exposure Incident)

Please Print

Employee’s Name ___________________________ Date ____________________

Date of Birth ___________________________ SS# _______________________

Telephone (Business) ___________________________ (Home) _______________________

Job Title ________________________________________________________________

Date of Exposure ______________________ Time of Exposure __________ AM ___ PM _____

Hepatitis B Vaccination Status ________________________________________________

Location of Incident _________________________________________________________

Describe what job duties you were performing when the exposure incident occurred __________

Describe the circumstances under which the exposure incident occurred (what happened that resulted in the incident) ________________________________

What body fluid(s) were you exposed to? __________________________________________

What was the route of exposure (e.g., mucosal contact, contact with nonintact skin, percutaneous)? ________________________________

Describe any personal protective equipment in use at time of exposure incident __________

Did PPE fail? _______ If yes, how? ____________________________________________

Identification of source individual(s) (names) _______________________________________

Other pertinent information ____________________________________________________
Information to be Provided to the Evaluating Healthcare Practitioner Form  
(Routes and Circumstances of Exposure Incident)

WRITTEN OPINION

To the Evaluating Physician:

After your evaluation of this Tulane University employee, please assure that the following information has been furnished to the employee and provide your initials beside the following statements:

(A) __________ The employee has been informed of the results of this evaluation.

(B) __________ The employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation and treatment.

No other findings should be included on this report.

Please give one copy of this completed form to the patient (Tulane employee) and send an additional copy by mail or fax to:

Tulane University OEHS  
Bloodborne Pathogens Coordinator  
1430 Tulane Ave. TW-16  
New Orleans, LA 70112  

Bloodborne Pathogens secure fax line: (504) 988-2297

Thank you for your evaluation of this employee.

____________________________
Physician’s signature

____________________________   ____________________
Physician’s name (printed)          Date
**Information to be Provided to the Evaluating Healthcare Practitioner Form**
(Routes and Circumstances of Exposure Incident)

**Notice to the Evaluating Healthcare Provider:**
Post-exposure evaluation and follow-up are to be provided to the employee consistent with the requirements of 29 CFR 1910.1030 (OSHA’s Bloodborne Pathogens Standard is available in full online at: [http://osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051](http://osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051)).

Therefore, upon presenting for evaluation, the Tulane employee should provide you with the following:

- Hepatitis B vaccination information history/record
- A completed “Information Provided to the Healthcare Provider” form

Available to you is the following support:

- National HIV/AIDS Clinicians' Consultation Center, University of California - San Francisco.

Exposure to blood-borne pathogens can present serious risks to health care providers. Prompt post-exposure treatment for HIV and hepatitis B virus can be effective, but because each exposure case is unique, determining who should receive prophylaxis and which drugs are most appropriate is not always easy.

The National Clinicians' Post-Exposure Free Prophylaxis Hotline (PEP line 1-888-448-4911) offers treating clinicians up-to-the-minute advice on managing occupational exposures (i.e., needlesticks, splashes, etc.) to HIV, hepatitis and other blood-borne pathogens. PEP line clinicians will respond to your call 24 hours a day, 7 days a week

- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis (available at: [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm))

- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis (available at: [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm))

± A decision to start antiretroviral therapy should be made within 2-4 hours post-exposure. Tulane University Infectious Disease Physicians are available by pager: (504) 663-9557.
APPENDIX 13

5.3.2 Procedures for Employees Following Possible B Virus Exposure

This document redacted from the Policy & Procedures Manual

For information regarding this document, please contact Kellie Mayer at the Tulane National Primate Research Center at: (985) 871-4811 kmayer@tulane.edu or the Office of Environmental Health & Safety (504) 988-2869
5.4.1 Simian Immunodeficiency Virus (SIV) Exposure

This document redacted from the Policy & Procedures Manual

For information regarding this document, please contact Kellie Mayer at the Tulane National Primate Research Center at: (985) 871-4811 kmayer@tulane.edu

or the Office of Environmental Health & Safety (504) 988-2869
Tulane University Environmental Health & Safety
Policies and Procedures Manual

APPENDICES

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Office of Environmental Health & Safety
1430 Tulane Avenue, TW-16
New Orleans, LA 70112
(504) 588-5486 (Downtown)
(504) 865-5307 (Uptown)
Website: tulane.edu/oehs
## APPENDIX A
### GLOSSARY OF ABBREVIATIONS

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<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>ACAR</td>
<td>Advisory Committee on Animal Research</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>AHERA</td>
<td>Asbestos Hazardous Emergency Response Act</td>
</tr>
<tr>
<td>AIHA</td>
<td>American Industrial Hygiene Association</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>APR</td>
<td>Air Purifying Respirator</td>
</tr>
<tr>
<td>CAAPDP</td>
<td>Certified Asbestos Abatement Project Design Professionals</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CHP</td>
<td>Chemical Hygiene Plan</td>
</tr>
<tr>
<td>DEQ</td>
<td>Department of Environmental Quality</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>DSR</td>
<td>Departmental Safety Representative</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>ESLI</td>
<td>End of Service Life Indicator</td>
</tr>
<tr>
<td>FEV</td>
<td>Forced Expiratory Volume</td>
</tr>
<tr>
<td>FVC</td>
<td>Forced Vital Capacity</td>
</tr>
<tr>
<td>HACCP</td>
<td>Hazard Analysis Critical Control Points</td>
</tr>
<tr>
<td>HCP</td>
<td>Hazard Communication Plan</td>
</tr>
<tr>
<td>HCS</td>
<td>Hazard Communication Standard</td>
</tr>
<tr>
<td>HEPA</td>
<td>High Efficiency Particulate Air</td>
</tr>
<tr>
<td>HVAC</td>
<td>Hearing/Ventilation/Air-Conditioning System</td>
</tr>
<tr>
<td>IBC</td>
<td>Institutional Biosafety Committee</td>
</tr>
<tr>
<td>IDLH</td>
<td>Immediately Dangerous to Life and Health</td>
</tr>
<tr>
<td>LADEQ</td>
<td>Louisiana Department of Environmental Quality</td>
</tr>
<tr>
<td>LHCP</td>
<td>Licensed Health Care Professional</td>
</tr>
<tr>
<td>LWC</td>
<td>Louisiana Workers’ Compensation</td>
</tr>
<tr>
<td>MSDS</td>
<td>Material Safety Data Sheet</td>
</tr>
<tr>
<td>MSHA</td>
<td>Mine Safety &amp; Health Administration</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>NOFD</td>
<td>New Orleans Fire Department</td>
</tr>
<tr>
<td>NOPD</td>
<td>New Orleans Police Department</td>
</tr>
<tr>
<td>NVLAP</td>
<td>National Voluntary Laboratory Accreditation Program</td>
</tr>
<tr>
<td>OEHS</td>
<td>Office of Environmental Health and Safety</td>
</tr>
<tr>
<td>OPIM</td>
<td>Other Potentially Infectious Materials</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>PCB</td>
<td>Polychlorinated Biphenyls</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limits</td>
</tr>
<tr>
<td>PIBW</td>
<td>Potentially Infectious Biomedical Waste</td>
</tr>
<tr>
<td>PL-HCP</td>
<td>Physician or Licensed Health Care Provider</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>PPE-HACP</td>
<td>Personal Protective Equipment-Hazard Assessment Cert. Program</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>RPP</td>
<td>Respiratory Protection Program</td>
</tr>
<tr>
<td>SAR</td>
<td>Supplied Air Respirator</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedures</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limits</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Values</td>
</tr>
<tr>
<td>TNPRC</td>
<td>Tulane National Primate Research Center</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>TUHC</td>
<td>Tulane University Hospital/Clinic</td>
</tr>
<tr>
<td>TUHSC</td>
<td>Tulane University Health Sciences Center</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
<tr>
<td>ZMS</td>
<td>Zero Mechanical State</td>
</tr>
</tbody>
</table>

*Appendices / Page 2*
APPENDIX B
GLOSSARY

ABSORBENT | Any substance exhibiting the property of absorption. The penetration of one substance into the inner structure of another.

ABSORPTION | The penetration of one substance into the inner structure of another.

ACTION LEVEL | A concentration designated by OSHA for a specific substance, calculated as an eight-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

ACUTE TOXICITY | A substance which can cause damage or interfere with the metabolism of living tissue as the result of a single or short-duration exposure.

ADSORPTION | Adherence of the atoms, ions, or molecules of a gas or liquid to the surface of another substance, called the adsorbent. Examples include activated carbon, activated alumina, and silica gel.

AEROSOL | Solid or liquid particles of a microscopic size dispersed in a gaseous medium (air).

AGGRESSIVE SAMPLING | Sampling technique in which settled dust is stirred up to simulate activity. This is a final air sampling technique conducted upon completion of an asbestos abatement project to estimate the airborne concentration of residual fibers.

AIRC CHANGES/HOUR | Measurement taken to determine the quantity of air provided to or exhausted from an area.

AIR-LINE RESPIRATOR | Respirator consisting of a source of compressed air to which the facepiece is connected by means of a small diameter hose. In the line is a pressure reduction valve and a flow regulating device. This type respirator is used for protection in atmospheres that are not immediately dangerous to life or health or from which the wearer can escape without the aid of the respirator. There are three basic types: constant flow, demand flow, and pressure demand.

AIR PLenum | A condition in which the pressure of the air in an enclosed space is greater than that of the outside atmosphere.

AIR PURIFYING RESPIRATOR | A respirator designed to protect the wearer against inhalation of particular chemicals, dusts, mists, etc. These respirators consist of a facepiece with some type of filter or sorbent to remove unwanted materials and to keep them from entering the breathing zone.

AIR VELOCITY | Time rate of linear motion of air in a given direction.

ALKALI | Any substance which in water is bitter, more or less irritating or caustic to the skin and mucous membranes; turns litmus blue, and has a pH value greater than 7.0.

ALLERGEN | Any substance that acts in the manner of an antigen (infective organism able to induce antibody formation) on coming into contact with body tissues by inhalation, ingestion, or skin adsorption.
A MENDED WATER SOLUTION | Water that has been modified by the addition of a surfactant that softens the water to allow for a more complete wetting of the asbestos-containing material.

AMPERE | Unit of electric current equivalent to the flow of one coulomb per second or to the steady current produced by one volt applied across a resistance of one ohm.

ANTINEOPLASTIC AGENTS | Agent inhibiting or preventing the growth and spread of neoplasms or malignant cells.

ANTISEPTIC | Opposing sepsis, putrefaction, or decay, especially in preventing or arresting the growth of microorganisms as on living tissue.

ANTIVIVISECTIONIST | “Animal rights” activist.

ASBESTOS | The name given to a group of naturally occurring minerals that separate into fibers. Asbestos refers to several forms of inorganic, silicate, fibrous materials including chrysotile, crocidolite, amosite, temolite, actinolite, and anthophyllite.

ASBESTOS DISPOSAL VERIFICATION FORM | A form from the Louisiana Department of Environmental Quality that must be submitted to LADEQ for approval prior to beginning asbestos removal.

ASBESTOS PROJECT | Any project where renovation/demolition is done or any project in which activities are carried out involving the removal and/or cleanup of asbestos material.

ASBESTOS WORK LIST | A listing of personnel who have been properly trained in the procedures to be followed when working with asbestos. Identification of this group of personnel will include a current medical exam on file should the project require such exams due to estimated exposure levels or the use of air purifying respirators. The list will be maintained by OEHS with copies for each department.

ASEPTIC | Preventing infection, free or freed from pathogenic microorganisms.

ASPHYXIANT | Material with the ability to deprive the tissue of oxygen.

ATTACHED BUILDING | A building having only one common wall with a building having other type occupancies which is often used to store flammable substances.

ATTENDANT | An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant’s duties assigned in Tulane’s confined spaces program.

AUToclAVE | A chamber usually of cylindrical shape, provided with a door or gate at one end which can be securely closed during operation, which can accommodate steam pressures of considerable magnitude or concentrations of sterilant gases such as ethylene oxide. Autoclaves are often used in certain sterilization processes.

BAFFLE | A flow-regulating device consisting of a perforated metal plate placed horizontally in liquid-mixing tanks, distillation columns, and the like to restrict or divert the passage of liquid, thus providing a uniformly dispersed flow. Baffles are also used in open-steam autoclaves to ensure even distribution of the entering steam, as well as in hoods to ensure even exhaust of airflow.

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Benching | A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Biological Hazard | Biological agents or substances present in or arising from the work environment which present or may present a hazard to the health or well being of the worker or community.

Biological Indicator | A bacterial spore strip or suspension of bacterial spores that will grow when sterilization procedures are inadequate. This device is used to indicate proper sterilization of materials in an autoclave.

Biological Safety Cabinet | A primary containment device used in a laboratory working with infectious agents.

Biological Safety Levels | Four levels which consist of combinations of laboratory practices and techniques, safety equipment, and laboratory facilities appropriate for the operations performed and the hazard posed by the infectious agents and for the laboratory function or activity.

Bonding | Providing an electrical path between the storage container and the container being filled when pouring flammable liquids.

Cannula | A small tube for insertion into a body cavity or into a duct or vessel.

Carcinogen | A substance that has been shown by valid, statistically significant epidemiological evidence to cause cancer. A human carcinogen causes cancer in people. An experimental carcinogen is shown by experimental evidence to induce cancer in animals.

Caustic | Any strongly alkaline material which has a corrosive or irritating effect on living tissue.

Centrifuge | A rotational separating device which uses the technique of applying centrifugal force to a mixture or suspension of materials of closely similar densities causing materials of different densities to separate.

Certified Asbestos Abatement Project Design Professional | A designer who has attended and received a passing score from the Louisiana Department of Environmental Quality training course specifically devised for asbestos project designers.

Chemical Fume Hood | A form of local exhaust ventilation commonly found in laboratories using toxic, corrosive, flammable, or malodorous substances the purpose of which is to minimize or prevent the escape of contaminants from the hood to the laboratory air and by this means to provide containment.

Chemical Hygiene Officer (CHO) | An employee, designated by a company, who is qualified by training or experience to provide technical guidance in the development and implementation of the Chemical Hygiene Plan.

Chemical Hygiene Plan (CHP) | A written program developed and implemented by a company which sets forth procedures, equipment, personal protective equipment and work practices to protect employees from health hazards presented by hazardous chemicals used in that particular workplace.
CHEMICAL SYNTHESIS | Creation of a substance by means of one or more chemical reactions.

CHROMATOGRAPHY | A group of laboratory separation techniques based on selective adsorption by which components of complex mixtures (vapors, liquids, solutions) can be identified.

CHRONIC TOXICITY | A substance which causes damage or interferes with the metabolism of living tissue after repeated or long-duration exposure or that becomes evident only after a long latency period.

COLD ROOM | A controlled environment room in which temperature and humidity are maintained within a specified range (down to 35°F) so that laboratory activities can be conducted under controlled conditions.

COLIFORM | Relating to, resembling, or being the colon bacillus which is often used to indicate microbial contamination from feces.

COMBUSTIBLE | Solids that are relatively difficult to ignite and that burn rather slowly, and liquids having a flashpoint greater than 100 °C), but below 150 °C, or higher, the total volume of which make up 99% or more of the total volume of the mixture.

COMMUNICATION | Time during which an infected host is a potential source of infection for an exposed host.

COMPRESSED GAS | A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 °C) or a gas or mixture of gases having, in a container, an absolute 380 °C) or a liquid 400 °C) as determined by ASTM D-323-72.

CONFINED SPACE | An enclosed space that 1) is large enough and so configured that an employee can bodily enter and perform assigned work, 2) has limited or restricted means of entry or exit (e.g., tanks, vaults, pits) and 3) is not designed for continuous employee occupancy.

CONTAINMENT | Safe methods for managing infectious agents in the laboratory environment by reducing exposure to and preventing escape into the outside environment of potentially hazardous agents. The three elements of containment include laboratory practice and technique, safety equipment, and facility design.

CONTINGENCY PLAN | Plan for dealing with an event such as an emergency that is of possible but uncertain occurrence especially when dealing with hazardous materials, wastes, or processes.

CORROSIVE | A substance that may cause visible destruction or irreversible alteration on human skin, or a liquid that has a severe corrosion rate on steel.

CRYOGENIC | Substances at temperatures below -200°C.

CULTURE | Cultivation of living material in prepared nutrient media.

CUT-OFF ROOM | A room, often used to store flammable substances, within a building having at least one exterior wall.

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CUTANEOUS | Of, relating to, or affecting the skin.

DECOMPOSITION | The breakdown of a chemical.

DECONTAMINATION | Removal of poisons from skin, clothing, equipment, etc.

DEMOLITION | The dismantling of a facility or the removal of a facility component that is not to be replaced and any related removal of asbestos-containing materials.

DERMAL | Of or relating to skin.

DERMATITIS | Inflammation of the skin.

DESIGNATED AREA | According to the Laboratory Standard, an area which may be used for work with "select carcinogens," reproductive toxins or substances which have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory or a device such as a laboratory hood.

DETOXIFY | To remove a poison or toxin or the effect of such.

DISINFECT | To destroy harmful microorganisms or inhibit their activity.

DISINFECTANT | A substance used on inanimate objects which destroys harmful microorganisms or inhibits their activity.

DISPOSAL | Getting rid of unusable by-products or materials.

DOSE | The quantity of radiation or energy absorbed in a specified mass in a given time frame.

DUST | A dispersion of solid particles usually resulting from the fracture of larger masses of material such as drilling, crushing, or grinding operations.

EGRESS | A place or means of going out.

ELECTROSTATIC | Of or relating to static electricity.

EMERGENCY | Any occurrence such as equipment failure, rupture of containers or failure of control equipment which results in an uncontrolled release of a hazardous chemical or energy into the workplace.

EMERGENCY ASBESTOS PROJECT OR RENOVATION | Project or renovation required when there is a sudden and unexpected failure causing a release of asbestos that was not planned. Operations necessitated by non-routine failures of equipment are included.

ENDEMIC | Belonging or native to a particular people or country.
ENERGY ISOLATING DEVICE | A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker, a disconnect switch, a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

ENERGY SOURCE | Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

ENGINEERING CONTROLS | The control of hazardous or unsafe conditions by effective engineering usually at the pre-contact stage (the design, purchase, maintenance or work-standard development stage) of operation.

ENTRY SUPERVISOR | The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing operations, and for terminating entry when an unacceptable condition is detected within the permit space.

ENVIRONMENTAL PROTECTION AGENCY | A federal agency that ensures the safe manufacture, use, and transportation of hazardous chemicals and oversees and regulates insults to the environment, air, water, land.

EPIDEMIC | An outbreak of disease affecting many individuals within a population, community, or region at the same time.

ERGONOMICS | An applied science concerned with the characteristics of people that need to be considered in designing and arranging things that they use in order that people and things will interact most effectively and safely - called also human engineering.

ETHYLENE OXIDE | A colorless flammable toxic gaseous or liquid compound used in synthesis and in sterilization and fumigation.

ETIOLOGIC AGENT | An agent which causes disease.

EVACUATION | To withdraw from a place in an organized way esp. for protection, to vacate.

EXCAVATION | Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

EXPLOSION PROOF WIRING | Wiring enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that a surrounding flammable atmosphere will not be ignited thereby.

EXPLOSIVE | A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

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EXPOSURE | The condition of being subject to some effect or influence.

EXPOSURE MONITORING | The measuring of an employees exposure to a particular chemical substance or airborne contaminant usually by using a commercial instrument or a personal air-sampling device which provides a measure of the airborne concentration of that substance in the environment.

FACE | The vertical or inclined earth surfaces formed as a result of excavation work.

FIBER RELEASE | A breakdown in the integrity of the material caused by deterioration or direct contact and damage thereby causing fibers to be released. Fiber release depends on the “accessibility” of the material and the “degree of associated disturbance” caused by a blow, water damage, or vibration.

FIRE AREA | An area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour, and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour.

FIRE SAFETY | The control of unfriendly fires that work to the detriment of man in terms of loss of life and property. Fire safety includes all fire prevention, detection, and response activities.

FIRE AID | Emergency care or treatment given to an ill or injured person before regular medical aid can be obtained.

FLAMMABLE | A chemical that falls into one of the following categories:

FLAMMABLE AEROSOL | A chemical which when properly tested, 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.

FLAMMABLE GAS | A chemical which at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13% by volume or less; or a chemical which at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit.

mixtures having components with flashpoints of 100 99% or more of the total volume of the mixture. (C) or higher, the total of which make up (C).

FLAMMABLE SOLID | A chemical 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. When ignited, the solid burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when properly tested, 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.

FLASHPOINT | The minimum temperature at which a liquid gives off vapor in sufficient concentration to ignite.

FM/UL APPROVED | Meets the standards established by Factory Mutual/Underwriter's Laboratory.
FOOTCandle | A unit of illuminance on a surface that is everywhere one foot from a uniform point source of light of one candle and equal to one lumen per square foot.

FORCED AIR VENTILATION | Effective movement of fresh clean air by a safe and reliable mechanical means, through a confined space in order to supply oxygen, dilute atmospheric contaminates and help reduce heat to within acceptable levels.

FORMALDEHYDE STANDARD | OSHA standard designed to protect workers from the hazards of working with formaldehyde.

FRIABLE ASBESTOS | Asbestos containing material that can be crumbled, pulverized, or reduced to powder by normal hand pressure. Sprayed asbestos, which is usually a mixture of asbestos fibers, other fibers (cellulose, non-asbestos mineral fibers) and a binder, contains friable material and is often applied to overhead surfaces (e.g., beams, ceilings, etc.) and occasionally to walls and pipes. It should be noted, however, that many of these materials that look like asbestos containing materials, may not contain any asbestos at all.

FRIABLE | Material which can be crumbled, pulverized, or reduced to a powder in one's hand.

FUMES | An aerosol of solid particles formed by condensation of vaporized materials.

FUNGICIDE | Any substance which kills or inhibits the growth of fungi.

GAS | A substance which is in the gaseous state at room temperature and pressure.

GENERAL INDUSTRY STANDARD | OSHA substance specific standards designed to protect industrial workers from the adverse effects of a particular chemical substance.

GENERAL VENTILATION | An attempt to dilute the concentration of toxic materials in the air with fresh air.

GENERATOR | One who produces or accumulates and disposes of hazardous waste.

GERMICIDE | Any agent that will kill bacteria (microorganisms).

GLOVEBAG | The removal of asbestos from pipe insulation by the use of a 6-12 mil bag fitted with long sleeves and gloves that totally encloses the asbestos so as not to distribute the asbestos fibers in the area in question.

GLOVEBAG PROCEDURE | The removal of asbestos from pipe insulation by the use of a 6-12 mil bag fitted with long sleeves and gloves.

GLOVE BOX | A sealed protectively lined compartment having holes to which are attached gloves for use in handling dangerous materials inside the compartment.

GROUNDING | Providing an electrical path from a storage container of flammable liquids to an earth ground. Also, providing a path for electrical current to pass to a ground in an electrical distribution system.

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HAZARD COMMUNICATION STANDARD | OSHA standard which gives employees the "right to-know" about hazards associated with the chemicals or products that are used on the job.

HA ZARD DETERMINATION | Assessing or evaluating a situation or material to determine the hazards that are associated with it.

HA ZARDOUS ATMOSPHERE (General) | An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

HA ZARDOUS ATMOSPHERE (Specific) | An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (i.e., escape unaided from a permit space), injury, or acute illness. For example: 1) flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL); 2) air-borne combustible dust at a concentration that meets or exceeds its LFL; 1) atmospheric oxygen concentration below 19.5% or above 23.5%; 4) atmospheric concentration of any substance that exposes employees to doses in excess of the PELs.

HA ZARDOUS CHEMICAL | 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 systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

HA ZARDOUS MATERIALS | Any material or substance which in normal use can be damaging to the health and well being of man.

HA ZARDOUS WASTE | Unusable by-product from a chemical operation which often contains toxic or polluting materials that become environmental threats if improperly disposed.

HEALTH HAZARD | A substance that may harm a person's health including carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

HEAT STRESS | The aggregate of environmental and physical factors that constitute the total heat load imposed on the human body.

HEAT STROKE | A condition marked by cessation of sweating, extremely high body temperature, and collapse that results from prolonged exposure to high temperature.

HEAVY METAL | A metal of atomic weight greater than sodium (22.9) that forms soaps on reaction with fatty acids, e.g., aluminum, lead, cobalt.

HERBICIDE | A pesticide used to destroy unwanted vegetation.

HIGH EFFICIENCY PARTICULATE AEROSOL (HEPA) FILTER | A high efficiency particulate aerosol air cleaning device (filter) used to remove airborne particulates with varying degrees of efficiency (90% to 99.997%) for particles down to 0.3 microns.

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HIGH RISK SUBSTANCES | Substances such as explosives, "select carcinogens," reproductive toxins, or substances having a high degree of acute toxicity which require special consideration and precautions for use.

HOOD | A device located in a laboratory, enclosed on five sides, to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory. Chemical manipulations may be conducted in the enclosure without inserting any portion of the employee's body other than hands and arms.

HOT WORK | Welding, cutting, soldering, or burning.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) | The virus that causes acquired immune deficiency syndrome (AIDS).

HYDROCARBONS | An organic compound consisting of the elements carbon and hydrogen.

IGNITABLE | Able to begin to burn.

IGNITION SOURCE | Source such as a spark which can cause something to burn.

IGNITION TEMPERATURE | The lowest temperature at which a substance will catch fire and continue to burn.

ILLUMINATION | The luminous flux per unit area on an intercepting surface at any given point.

INCOMPATIBLE | Chemicals which, when in contact with each other, could cause an unwanted reaction.

INDUSTRIAL HYGIENE | The science of protecting man's health through the control of the work environment.

INFECTIOUS | Capable of causing infection.

INFECTIVITY | The ability of an agent to invade host, lodge, and multiply.

INFRARED | The region of the electromagnetic spectrum including wavelengths from 0.78 micron to approximately 300 microns, (i.e., longer than visible light and shorter than microwave).

INGESTION | To eat or consume by mouth.

INGRESS | Entrance.

INHALATION | To breathe into the lungs.

INHERENT-HAZARD ASSESSMENT | Evaluation of confined space hazards that are present or can potentially develop during an entry. These hazards exist or can develop by virtue of the nature of the space and are not a function of materials introduced to perform any work within the space.

INOCULATION | An injection, shot, vaccination.

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INSECTICIDE | A type of pesticide designed to control insect life that is harmful to man, either directly as disease vectors or indirectly as destroyers of crops, food products or textile fabrics.

INSIDE STORAGE ROOM | A room totally enclosed within a building with no exterior walls which is often used to store flammable substances.

INVASIVE PROCEDURE | Surgical entry into tissues, cavities, or organs, or repair of major traumatic injuries.

IONIZING RADIATION | Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, by interaction with matter.

IRRITANT | Material which has the ability to cause inflammation of mucous membranes with which it comes in contact.

ISOTOPE | One of two or more forms or species of an element that have the same atomic number but different masses.

LABORATORY | A workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

LABORATORY SCALE | Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. This does not include workplaces where commercial quantities of materials are produced. Laboratory work done within a production facility, such as quality control, may be included.

LABORATORY STANDARD | OSHA standard developed to keep exposures below the permissible exposure limits in a laboratory setting.

LABORATORY USE OF HAZARDOUS CHEMICALS | All of the following criteria must be met: handling or use of chemicals on a "laboratory scale"; multiple chemical procedures or the use of multiple chemicals; the procedures are not part of a production process, nor in any way simulate a production process; and protective laboratory practices and equipment are in common use to minimize the potential for employee exposure to hazardous chemicals.

LAMINAR AIR FLOW | The streamline or uniform flow of air in a duct, hood, or room as opposed to turbulent airflow.

LASER | A device which produces a beam of coherent or monochromatic light as a result of photon-stimulated emission. Such beams have extremely high energy as they consist of a single wavelength and frequency.

LASER SAFETY OFFICER (LSO) | The person responsible within Tulane for assuring that lasers do not cause personnel to be exposed to their harmful non-ionizing effects. The LSO registers all lasers and inspects for their proper operation.

LETHAL CONCENTRATION 50% (LC50) | The concentration in air of a substance that causes the death of 50% of the test animals exposed to it within a specified time. Test animals and test conditions should be specified.

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LETHAL DOSE 50% (LD 50) | The quantity of material that when ingested, injected or applied to the skin as a single dose will cause the death of 50% of the test animals in a specified time. Test conditions should be specified.

LOCAL VENTILATION | Ventilation in which the contaminant being controlled is captured at or near the place where it is created or dispersed; an attempt to remove contaminants before they mix with the general room air.

LOCKING OUT | Neutralizing all energy sources to a machine before working on it so that a "zero mechanical state" is obtained and a worker is protected against unexpected mechanical movement.

LOCKOUT | The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

LOCKOUT DEVICE | A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flases and bolted slip blinds.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LA DEQ) | Agency which regulates air quality, water quality, hazardous wastes and radiation protection in the state of Louisiana.

LYOPHILIZING | Freeze-drying, a method of dehydration or of separating water from biological materials. The material is first frozen and then placed in a high vacuum so that the water (ice) vaporizes in the vacuum (sublimes) without melting and the non-water components are left behind in an undamaged state.

MANIFEST | A transportation document used to trace hazardous wastes from the generator to an ultimate treatment, storage, and disposal facility.

MATERIAL SAFETY DATA SHEET (MSDS) | A document provided by the manufacturer of a chemical or hazardous product that provides a detailed description of the chemical or hazardous product, physical dangers and/or health hazards associated with it, safety procedures, and emergency response techniques when handling the given chemical or product.

MEDICAL CONSULTATION | A meeting between an employee and a licensed physician for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous material or chemical may have taken place.

MEDICAL EXAMINATION | An examination by a licensed physician of an employee, usually consisting of a historical examination, a physical examination, and any clinical laboratory tests that may be needed.

MEDICAL SURVEILLANCE | The examining and testing of employees who may have been or who are potentially exposed to toxic or hazardous substances and processes. This could include medical and work histories, physical examinations, blood tests, and other laboratory procedures.
MEMBRANE FILTER | Method used for sampling fluids for quantification of microorganisms by placing the filter membrane directly on a nutrient medium and incubating. If the concentration of microorganisms is high, the microorganisms can be flushed or eluted from the membrane and treated for analysis.

MICROWAVES | That portion of the electromagnetic spectrum having wavelengths in the range between the far infrared and the radio-frequencies, i.e., between 1 millimeter and 30 centimeters.

MISTS | A dispersion of liquid particles, many of which are visible.

MUTAGEN | A chemical causing a heritable change in the gene structure.

NEGATIVE PRESSURE | Condition whereby the pressure inside of a container or room is less than the pressure outside of the container or room. The container or room is said to be under negative pressure.

NEUTRALIZE | To cause a chemical reaction in which water is formed by mutual interaction of the ions that characterize acids and bases when both are present in aqueous solution, the remaining product being a salt.

NIOSH | National Institute for Occupational Safety and Health, an organization that does research on occupational safety and health questions and makes recommendations to OSHA.

NOISE | Electromagnetic radiation that is composed of several frequencies and that involves random changes in frequency or amplitude, i.e. unwanted sound.

NON-FRIABLE ASBESTOS | Found in “hard” asbestos-containing materials such as cement products, cement-asbestos boards (i.e., transite), plaster, fireproof textiles, vinyl floor tiles, ceiling tiles, thermal and acoustical insulation, sprayed materials, and brake linings. These hard asbestos-containing products do not usually cause exposure unless they are sanded, cut or damaged in some manner.

NONIONIZING RADIATION | Those electromagnetic radiations that do not cause ionization in biological systems and that have photon energies less than 10-12 eV. Nonionizing radiation can cause dissipation of energy in the form of fluorescence or heat.

OCCUPATIONAL ACCIDENT | Any unusual occurrence that has resulted or could result in injury to an employee while the employee is on duty.

OCCUPATIONAL ILLNESS/INJURY | Any abnormal physical conditions or disorders caused by exposure to environmental factors associated with employment.

OSHA | Occupational Safety & Health Administration, a branch of the U.S. Department of Labor, a Federal agency responsible for establishing and enforcing standards for exposure of workers to harmful materials, and other matters affecting the health and well-being of personnel in their workplace environment.

ORAL | Of, given through, or involving the mouth.

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ORGANIC PEROXIDE | A special class of hydrocarbon compounds that have unusual stability problems and that are highly flammable, hazardous because of their extreme sensitivity to shock, sparks, or other forms of accidental ignition.

OUTDOOR STORAGE | An area totally separate from other facilities sharing no common walls often used to store flammable substances.

OXIDIZER | A chemical, other than a blasting agent or explosive, that starts or promotes combustion in other materials, causing fire either of itself or through the release of oxygen or other gases.

PARENTERAL | Situated or occurring outside the intestine referring particularly to the introduction of nutritive material into veins and subcutaneous tissues.

PARTICULATE | Of or relating to minute separate particles.

PATHOGEN | An etiologic agent having the ability to cause disease. Any virus, microorganism or other substance causing disease.

PERMISSIBLE EXPOSURE LIMIT (PEL) | Any exposure to asbestos that results in airborne levels of 0.2 fibers per cubic centimeter of air (fibers/cc) for a time weighted average of 8 hours.

PERMIT-REQUIRED CONFINED SPACE (PERMIT SPACE) | A confined space that has one or more of the following characteristics: 1) contains or has a potential to contain a hazardous atmosphere; 2) contains a material with the potential for engulfing an entrant; 3) has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor which slopes downward and tapers to a smaller cross-section; 4) contains any other recognized serious safety or health hazard.

PERSONAL PROTECTIVE EQUIPMENT (PPE) | Equipment such as gloves, goggles, respirators, etc., designed to protect the wearer from unexpected or harmful conditions or contact with infectious, toxic and corrosive agents, excessive heat, fire and other physical hazards.

PESTICIDE | Any substance used to destroy or inhibit the action of plant or animal pests.

pH | A value taken to represent the acidity or alkalinity of an aqueous solution.

PHASE CONTRAST MICROSCOPY (PCM) | Technique using a light microscope equipped to provide enhanced contrast between the fibers and the background, often used to analyze personal or area samples collected during asbestos abatement projects.

PHYSICAL HAZARD | Any condition (static or dynamic) existing in the workplace, which can cause or contribute to an accident and/or illness if not properly safeguarded by physical barriers and/or operational procedures. Also, a chemical for which there is scientifically valid evidence that it is a combustible liquid, compressed gas, explosive, flammable, organic peroxide, oxidizer, pyrophoric, unstable (reactive), or water-reactive.

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PLANNED ASBESTOS PROJECT | A renovation operation or operations in which the amount of asbestos material that is removed or stripped within a given period of time can be predicted. Operations that are individually non-scheduled are included when such operations can be predicted to occur during a given period.

POLYCHLORINATED BIPHENYLS (PCBs) | Highly regulated compounds under the Federal Toxic Substances Control Act which are suspected carcinogens.

POSITIVE PRESSURE | Condition whereby the pressure inside of a container or room is greater than the pressure outside of the container or room. The container or room is said to be under positive pressure.

POTENTIALLY INFECTIOUS BIO MEDICAL WASTE (PIBW) | Waste which contains pathogens with sufficient virulence and quantity that exposure to the waste by a susceptible host could result in an infectious disease.

PRIMARY CONTAINMENT | The protection of personnel and the immediate laboratory environment from exposure to infectious agents by using good microbiological technique and the use of appropriate safety equipment. Vaccines may also be used to provide an increased level of personal protection.

PROTECTIVE GUARDS | Barriers that can protect against and prevent injuries from the following: direct contact with exposed moving parts of a machine, work in process (such as metal chips that fly from abrasive wheels), machine failure, electrical failure, or operator error.

PROTECTIVE SYSTEM | A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures.

PULMONARY FUNCTION TEST | A part of a medical examination that is done to determine the health status of a person's lungs. It consists of a forced vital capacity (FVC) test as well as a forced expiratory volume (FEV) test.

PYROPHORIC | Any liquid or solid that will ignite spontaneously in air at about 130 F (54.4 C).

QUALITATIVE RESPIRATOR FIT TEST | A test of the tightness and effectiveness of a respirator on a person by exposing the person to a distinctive odor and determining if the person can detect the odor.

QUANTITATIVE RESPIRATOR FIT TEST | A test of the tightness and effectiveness of a respirator on a person by exposing that person to a known volume of particulates or vapors outside the respirator and comparing the amount of material that passes into the inside of the respirator.

RADIATION SAFETY OFFICER (RSO) | Person responsible for the implementation of the radiation protection program at Tulane.

RADIONUCLIDE | A substance capable of emitting alpha, beta, or gamma rays of radioactivity.

RADIOISOTOPE | An isotopic form of an element that exhibits radioactivity.
RADIOLOGICAL FUME HOOD | A hood designed for service with radioactive materials, usually equipped with stainless steel ducts and interior surfaces made of nonporous material such as stainless steel. These hoods can be equipped with HEPA filters and/or activated charcoal absorbers at the air outlet when required by NRC regulations.

REACTIVE | A substance that produces dangerous gases and/or fire when mixed with air, water or pH changes, or that is capable of detonation or explosion at standard temperature and pressure.

RECOMBINANT DNA | Material formed by the transference of genetic material from the genes of one species to those of another by uniting a portion of the DNA of one organism with extranuclear sections of DNA from another organism.

RECYCLING | Recovery and reuse of scrap materials.

RED BAGS | Plastic red waste bags that are used to collect, store, and dispose of infectious or potentially infectious biomedical waste.

REGULATOR | A device which controls the action of a machine or flow of a fluid (air, gas, water). A gas regulator is placed on a compressed gas cylinder to control the flow of the gas from the cylinder.

RENOVATION | Altering, in any way, one or more facility components that contain asbestos materials which are to be retained in place.

REPRODUCTIVE TOXINS | Chemicals that affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses.

RESPIRATOR | A device worn over the mouth and nose for protecting the respiratory tract.

RESPIRATOR CARTRIDGES | Part of a respirator designed to protect against low concentrations of chemicals such as solvent vapors.

RESPIRATOR FILTERS | Part of a respirator designed to protect against particulate matter such as dusts or asbestos fibers.

RESPIRATORY PROTECTION FACTOR (RPF) | The ratio obtained when the concentration of a contaminant outside of a mask is divided by the concentration of contaminant found inside the mask.

RETRIEVAL SYSTEM | The equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from a permit space.

RETROFILL | The process whereby a contaminated substance such as PCB contaminated oil in a transformer is drained and replaced with a noncontaminated substance such as with non-PCB containing oil.

RIGHT-TO-KNOW | A term which referring to the Federal Hazard Communication Standard (29 CFR 1910.1200) which was developed because the government felt that workers should be informed about the hazards they face on the job and should know how to protect themselves from these hazards.

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RISK | Possibility of loss or injury.

ROUTINE EXPOSURE | Exposure to a substance three times or more per week.

SANITIZATION | To make sanitary as by cleaning or sterilizing. It also is the effective bacterial treatment made by a process that provides enough cumulative heat, or concentration of chemicals for enough time to reduce the bacterial count, including pathogens, to a standard plate count of not more than 100 per utensil on utensils or equipment.

SANITIZE | To make sanitary as by cleaning or sterilizing. (See sanitization.)

SCANNING ELECTRON MICROSCOPY (SEM) | Technique used for the analysis of air, bulk, or wipe samples that can identify asbestos fibers by morphology and elemental analysis using energy dispersive x-rays.

SECONDARY CONTAINMENT | The protection of the environment external to the laboratory from exposure to infectious materials by a combination of facility design and operational practices.

SELECT CARCINOGEN (General) | Any substance that is regulated by OSHA as a carcinogen or meets other criteria as causing cancer.

SELECT CARCINOGEN (Specific) | Refers to any substance that meets one of the following criteria: 1) It is regulated by OSHA as a carcinogen; or 2) it is listed under the category "known to be carcinogens" in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or 3) it is listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) (latest editions); or 4) it is listed in either Group 2A or 2B by IARC or under the category "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria: (1) After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m³; (2) after repeated skin application of less than 300 (mg/kg of body weight) per week; or (3) after oral dosages of less than 50 mg/kg of body weight per day.

SELF CONTAINED BREATHING APPARATUS (SCBA) | Respirator which operates independently of the surrounding atmosphere since the mask comes with its own air supply. There are three basic types: oxygen cylinder, rebreathing demand, and self generating.

SENSITIZER | A substance that causes a bodily reaction, i.e. dermatitis, only after the induction of acquired sensitivity or allergy, such as of the skin, by previous exposure.

SERVICING AND/OR MAINTENANCE | Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

SHIELDING | A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. They can be permanent or portable. “Radiation” shielding protects against harmful radiation.
SHOCK | A state of profound mental and/or physical disturbance consequent to severe physical injury (electrical shock, amputation, heat stress, loss of blood, etc.) or emotional disturbance. Shock sensitive chemicals are chemicals that become reactive or possibly explosive when shaken, jarred, or disturbed, and special care should be taken when handling these types of chemicals.

SHORING | A structure that supports the face or sides of an excavation and which is designed to prevent cave-ins.

SLOPING | A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins.

SMOKE | Aerosols resulting from incomplete combustion which consist mainly of carbon and other combustible materials.

SOLVENT | A substance capable of dissolving another substance (solute) to form a uniformly dispersed mixture (solution) at the molecular or ionic size level.

SOUND | Mechanical radiant energy that is transmitted by longitudinal pressure waves in a material medium (as air) and is the objective cause of hearing.

SPECIAL WASTE | A waste that presents special problems for storage and disposal.

STATIC PRESSURE | The potential pressure exerted in all directions by a fluid (air) at rest. For a fluid (air) in motion it is measured in a direction normal (perpendicular) to the direction of flow. Usually expressed in inches water gauge when dealing with air.

STERILIZATION | Complete destruction of all bacteria and other organisms in an industrial, food, or medical product; it must be followed by aseptic packaging to prevent recontamination, usually by hermetic sealing. The methods used involve either wet or dry heat, use of chemicals such as formaldehyde and ethylene oxide filtration, and irradiation by UV or gamma radiation.

STERILIZE | To completely destroy all bacteria and other infectious organisms in an industrial, food, or medical product.

SUPPLIED AIR RESPIRATOR | Respirator that delivers breathing air through a supply hose connected to the worker's facepiece. It can be either half-mask or full-face.

TAGGING | Placing a tag on any machinery receiving maintenance or repair work warning other workers of the hazardous situation.

RAGOUT DEVICE | A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the RAGOUT device is removed.

RAGOUT | The placement of a RAGOUT device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the RAGOUT device is removed.

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THRESHOLD LIMIT VALUE (TLV) | The Threshold Limit Value established by ACGIH: the time-weighted average concentration for a normal 8-hour workday or 40-hour work week to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

TOXICITY | The toxicity of a material refers to its ability to damage or interfere with the metabolism of living tissue. An acutely toxic substance can cause damage as the result of a single or short-duration exposure. A chronically toxic substance causes damage after repeated or long-duration exposure or becomes evident only after a long latency period.

TRANSMISSION ELECTRON MICROSCOPY (TEM) | Technique used for the analysis of air samples or bulk samples for the presence of asbestos.

TREATMENT | The rendering of hazardous wastes as nonhazardous through some physical or chemical process such as neutralization, etc. A treatment, storage, and disposal permit is needed from LADEQ in order to treat hazardous wastes.

UNDERGROUND STORAGE TANK | Storage container of hazardous materials that is placed underground and that serves as a reservoir of these materials to be pumped from the tank into cars, trucks, or other containers as needed. Underground storage tanks are subject to corrosion and leakage and must be periodically monitored to protect against soil and ground water contamination.

UNIVERSAL PRECAUTIONS | A system of infection control which assumes that every direct contact with body fluids is infectious and requires every employee having direct contact with body fluids be protected as though such body fluids were infected with a blood-borne pathogen.

UNSTABLE | 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.

VAPORS | The gaseous phase of a material which is ordinarily a solid or liquid at room temperature and pressure.

VELOCITY PRESSURE | The kinetic pressure in the direction of flow necessary to cause a fluid (air) at rest to flow at a given velocity. Usually expressed in inches water gauge when dealing with air.

VENTILATION | A method of controlling the environment with air flow.

VIBRATION | A periodic motion of the particles of an elastic body or medium in alternately opposite directions from the position of equilibrium when that equilibrium has been disturbed.

VIRULENT | Measure of severity of disease (mortality, paralysis, etc.)

VOLATILE | The tendency of a solid or liquid material to pass into vapor state at a given temperature.

VOLT | The practical meter-gram-second unit of electrical potential difference and electromotive force equal to the difference of potential between two points in a conducting wire carrying a constant current of one ampere when the power dissipated between these two points is equal to one watt and equivalent to the potential difference across a resistance of one ohm when one ampere is flowing through it.

WARM ROOM | A controlled environment room in which temperature and humidity are maintained.
within a specified range (up to 120°F) so that laboratory activities can be conducted under controlled conditions.

**W A T E R - R E A C T I V E**  | A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.
As of 9/03, units are being formed. When identity and composition of each unit is finalized, information will be posted in this Appendix C.
**APPENDIX D**

**FORMS LIST (Alphabetic)**

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<td>Confined Space Hazard Addendum</td>
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<tr>
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<td>Information Provided to the Healthcare Practitioner Form</td>
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<td>Laboratory/Studio Close-Out <strong>Notification</strong></td>
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<td>Laboratory H&amp;S Inspection Report</td>
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<td>Needlestick &amp; Sharp Object Injury Report</td>
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<td>Office (General) H&amp;S Inspection Report</td>
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<tr>
<td>Personal Protective Equipment Assessment</td>
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<td>Respiratory Hazard Assessment</td>
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<td>Right to Second Opinion Memo</td>
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## APPENDIX D

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<td>Student Report of On-Campus Environmental Injury or Disease</td>
<td>24F-OEHS</td>
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<tr>
<td>Telephone Bomb Threat Checklist</td>
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<tr>
<td>Vehicle Repair Shop H&amp;S Inspection Report</td>
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<td>WMSD Hazard Report</td>
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### APPENDIX E

**FORMS LIST (Numeric)**

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<td>Section 3</td>
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*Appendices / Page 26*
## APPENDIX E

### FORMS LIST (Numeric)

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*End of Text - Return to Appendices, Page 1 Outline*
Revisions approved by Operations Committee (new or revised verbiage is in bold type)
Approval Date: May 20, 2004

You are advised to note these changes and insert this addendum sheet in the front of the binder containing your hard copy of the Manual. This will document your receipt and review of the revised sections.

Section 10 Basic Safety
- Page 3, B. 10
  Hallways are to be kept clear to prevent injury during emergency evacuation. **Any item left in a hallway for more than 48 hours will be removed at the owner’s expense.** Do not obstruct fire or exit doors. Fire doors shall be kept closed except during passage. These doors should not be secured in the open position except by approved devices connected to the fire alarm system.

- Page 3, C. 3
  Keep stairways free from debris. Do not use stairwells or stairway landings for storage. **Any item left in a stairwell or stairway for more than 48 hours will be removed at the owner’s expense.**

- Page 3, C. 4 (moved from paragraph C 3)
  Defective handrails, lighting, and stair treads must be reported to Facilities Services.

Section 26 Fire Safety
- Page 2, I.A.1
  Keep all designated exits (corridors, stairwells, hallways, foyers) clear of obstructions. Do not store any materials inside stairwells, **mechanical** equipment rooms, electrical closets, or telephone closets. **Any item left in a corridor, stairwell, hallway, or foyer for more than 48 hours will be removed at the owner’s expense.**
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