# *VCU/MCVH/MCVP*

# SAFETY MANUAL


Medical College of Virginia Hospitals
and
Medical College of Virginia Physicians
(**Satellite Locations**)

***Virginia Commonwealth University***

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**Blank columns should be filled in with numbers for your location.**
All numbers should be verified for your specific location**.**

**Be ready** to give the name and **street address** of this location is (fill in box):

**(See Next Page)**

_____

_____

_____

# Fire Emergency & Evacuation Procedures

Upon Discovering A Fire or Smoke:

**R A C E R**.

* **R**emove anyone in immediate danger. If the fire is in a patient's room, remove the patient and CLOSE THE DOOR TO THAT ROOM.

* **A**ctivate the alarm by pulling the nearest fire alarm pull station. Call the emergency number, **911**, give any information that you have.

  The name and **street address** of this location is (Fill in Box):

  _____

  _____

  _____

* **C**lose all doors. Have patients and visitors remain in their rooms and close the doors. .

* **E**xtinguish the fire if possible. Use a portable fire extinguisher, if the fire is small and has not spread beyond the point where it started.

* **R**elocate patients to a safe area.

* Designated personnel must account for patients on the floor, or in the clinics, and identify how they will be relocated.

* Move ambulatory patients first, then patients on stretchers and wheelchairs.

* If you must move patients by the elevator, fire personnel or an other official will direct you.

* Refer to the **MCVH/MCVP Emergency Preparedness Plan** for a full evacuation plan.

# Medical Emergencies

## Cardiac Incident

Call the emergency number **911** and indicate if the emergency involves a child or adult. Be ready to give the following information.

The name and **street address** of this location is (Fill in Box):

| |
|---|
| _____ |
| _____ |
| _____ |

## Injuries

**Emergency Care for Employees, Students or Visitors**

Cases requiring emergency care (severe burns, heavy bleeding, unconscious, fractures) are to be taken to the Emergency Department of the closest hospital. If transportation is needed,

- **Dial 911 for an ambulance**. Be ready to give the following information:

The name and **street address** of this location is (Fill in Box):

| |
|---|
| _____ |
| _____ |
| _____ |

- Give the exact location of the injured person
- Number of people requiring transport
- Description of the injury/illness.

# NON-EMERGENCY CARE

**MCVP Employees**

Employee Health Services (call 828-0584) provides medical treatment to MCVP employees who are injured on the job or acquire an occupational illness. Employees may be seen Monday through Friday from 8:30 a.m. to 4:00 p.m. After hours, injuries can be treated in the MCVH Emergency Room. MCVP employees may also receive treatment from other physicians listed on thr "Physcians Selection Form."

If an employee should incur a work-related injury or occupational disease, they must notify their supervisor as soon as possible so they do not forfeit any rights they may have to workers' compensation benefits. The employee and supervisor are both required to complete the MCVP "Employer's First Report of Accident" and a "Physician Selection" form within 24 hours of the injury. The completed accident report form and the physician selection form should be hand-delivered or mailed through campus mail to the MCVP Department of Human Resources, Attn: Benefits Coordinator, Box 980232 (phone 342-7617). Please do not leave either the accident form or physician selection form in Employee Health, the emergency room or other treating physicians office. Failure to file correct MCVP forms could also result in the loss of benefits.

# Chemical Spill Response

VCU, MCVH and MCVP has a response program to help employees prepare for an event involving a hazardous material emergency. Each department or unit is responsible for handling emergencies within their own work environments. Emergency preparedness plans should be developed and communicated to all affected employees prior to an emergency occurring. Specific emergency assistance is available through the Office of Environmental Health and Safety. Please note that pre-packaged emergency spill kits are available to handle small scale spills of solvents, aldehyde-based products, biologicals, mercury, and acids/caustics. These spill kits can be purchased through a local laboratory safety supply company.

Report any spills of hazardous chemicals immediately by calling:

## Chemical/Radiation Emergency Line at 828-9834

Properly trained personnel will be available to evaluate and offer technical assistance to facilitate the clean-up of the spill. Be prepared to provide a description and location of the incident including the identity of the hazardous material and the extent of any personnel contamination. Do not call housekeeping to manage these situations. If a spill does occur, the following general procedures may be used but should be tailored to fit the individual needs of the department's Emergency Response Plan:

1. **Implement the department's Emergency Response Plan.**
2. Attend to any persons who may have been contaminated. Chemical spills on the skin or eyes must be treated immediately.
3. Notify persons in the immediate area about the spill.
4. Evacuate all nonessential personnel from the spill area.
5. Refer to the appropriate material safety data sheet and if the spilled material is flammable, turn off ignition and heat sources.
6. Avoid breathing vapors of the spilled material; if necessary use an appropriate respirator.
7. Leave on or establish exhaust ventilation if it is safe to do so.
8. Secure the supplies necessary for the cleanup. Most small liquid spills ( < 100 ml.) can be absorbed with paper towels, sand or an absorbent.
9. During the cleanup operation, wear appropriate protective equipment.
10. Notify *OEHS* if a regulated substance is involved.

After the cleanup of a chemical spill, all materials, including any paper towels used in the cleanup, must be disposed of as waste, according to the policies for Chemical Waste Disposal found in this manual. Particular care should be exercised in handling the absorbent materials used in the cleanup of flammable liquids to protect against absorbent fire hazards.

# Biological/Radiation Emergency

**VCU has a response program to help employees when a hazardous material or radiation emergency occurs. If you are involved in an incident, or observe one, there is a 24 hour number to call.**

**Calling 828-9834 will activate the university's chemical/radiation emergency response system**. When you call, please provide the following information:

- Your name and telephone number.
- A description of the incident - is the incident life threatening?
- The location of the incident.
- Identity of the hazardous or radioactive material involved in the incident.
- Extent of personnel contamination.

# Bomb Threat Emergency

Call **911**, be ready to give the following information.

-The name and **street address** of this location is (Fill in Box):

_____

_____

_____

- Your name
- Your department
- Your building and room number
- Time of the call
- Wording of the bomb threat
- Section of the building involved
- Size and shape to the package used
- Type of fuse
- Sex of the person making the call
- Background noises heard

Follow the directions given by the police who respond to your call.
**MCVH/MCVP has specific policies and procedures dealing with bomb threats in healthcare facilities. Refer to the MCVH/MCVP Internal Emergency Preparedness Plan.**

# Unusual Event Reporting

## MCVH and MCVP

The MCVH and MCVP Department of Risk Management is a resource available to all staff for handling undesirable events that may occur during the delivery of patient care. The Risk Management Department serves as a liaison with the hospital's liability insurance carriers. The following events need to be reported, as soon as possible, to the Department of Risk Management.

* Any unusual event that occurs in the hospital, or outpatient areas, to a patient or visitor needs reporting. The procedure for completing the "Report of Unusual Occurrence" can be found in the MCVH/MCVP Policy Manual, Policy 7204.02. Serious events must be reported to **828-RISK (7475)** (or beeper # 6107) immediately.

* Any lost, stolen, or damaged patient property needs to be reported in accordance with MCVH/MCVP Policy 7204.02.

# RESPONSIBILITY FOR SAFETY

**Faculty, Employees, Volunteers, and Students**
Faculty, employees, volunteers, and students should be aware of all safety procedures for their particular area in addition to those in this manual which apply. They should report accidents, injuries, or unsafe conditions either to the supervisor or the appropriate university office. It is hoped that all faculty, employees, volunteers, and students will maintain a positive attitude toward safety at all times.

**Supervisors**
Supervisors play a major role in providing a safe environment for students, patients, visitors, and employees. Refer to the separate policy statement at the end of this section.

**Patients and Visitors**
Patients and visitors are responsible for following all posted safety regulations and the directives of authorized personnel in matters which pertain to safety.

**Chairman of Academic Units/directors of Non-academic Units**
Each chairman/director is responsible for the safe operation of their unit. The chairman/director is to appoint a safety committee consisting of a cross section of the unit (faculty, technical and non-technical staff, and students) which shall develop safety rules, including special procedures and precautions for any and all laboratories. Included in the responsibility is assessing the need for personal protective equipment and providing the equipment where required.

**Faculty and Staff Liability**
Recent court decisions have established that the faculty and staff of an institution may be personally and legally liable for the accidents of students and employees under their supervision, if the accident results from their negligence, or if the accident causes personal injury or property loss. Liability may also arise from the failure of a superior to adequately supervise a subordinate or failure to establish and implement proper rules of conduct for the unit.

All personnel should be aware of the fact that they may be liable not only for their own acts or failure to act, but in many cases may be personally responsible for the acts or failure to act of others under their supervision.

Employees who are injured at work as a result of failure to use safety equipment or otherwise fail to comply with safety policies and procedures, may not be eligible for workers' compensation. MCVH and MCVH Physician staff are subject to MCVH/MCVP policies and will be subject to discipline for failure to comply with safety guidelines. In addition, classified and other University employees violating the University's safety policies/procedures may be disciplined under the State's Standards of Conduct, which could result in suspension or termination from employment.

# Safety Committees[1]

1. **University Safety Liaison Committee**
This committee is composed of university faculty and staff who have expertise in safety. The committee is responsible for developing policies and guidelines relating to safety for the entire institution. The committee is composed of the Director of the Office of Environmental Health and Safety (Chair), Director Physical Plant Division, Director of Campus Police, Director of Employee Health, the MCVH Safety Officer and others deemed appropriate by the Chair. The committee is responsible for developing policies and university safety guidelines. Annually the committee receives nominations for the "University Safety Awareness Award." Those individuals or departments making an outstanding contribution to the safety of the university and academic medical center are recognized.

2 **MCVH Environment of Care Committee**
This committee provides a safe, functional, supportive and effective environment for patients, staff members, and other individuals in the hospital. In order to achieve this goal MCVH/MCVP utilizes the following processes:

a. Strategic and on-going master planning by hospital leaders for the space, clear circulation of occupants, equipment, supportive environment and resources needed to safely and effectively support the services provided.
b. Educating the staff about the role of the environment in safely, sensitively and effectively supporting patient care.
c. Developing standards to measure staff and hospital performance in managing and improving the environment of care.
d. Implementing plans to create and manage the hospital's environment of care.

3. **Radiation Safety Committee**
Various members of the university community serve on this committee. The committee reviews and approves all research and clinical, human and non-human uses of radionuclides and radiation producing devices.

4. **Institutional Biosafety Committee**
This committee has been established to review control practices for handling biohazardous agents, carcinogens, infectious agents, and recombinant DNA. The committee also serves in an advisory capacity to the University Office of Environmental Health & Safety. The committee is composed of individuals from different university departments and units.

[1] For information about the university safety committees, contact Environmental Health and Safety at 828-6347.

5. **Institutional Review Boards**
(Committee on the Conduct of Human Research) This committee is composed of faculty members and three non-VCU affiliated individuals. It is responsible for protecting the safety and rights of persons involved as subjects in research at the university.

# VCU, MCVH and MCVP Safety Support Services

**1. MCVH Safety And Security**

The MCVH Department of Safety and Security is responsible for maintaining a comprehensive safety program that assures a safe and secure environment for patients, visitors and staff. The department provides security surveys, patient information assistance and campus escort service during the evening hours.

**2. MCVP Safety Managers Office**

The MCVP Safety Office is responsible for safety compliance in MCVP satellite offices. This office acts as liaison between VCU, MCVH, MCVP and the satellite locations, and provides various safety support services.

**3. Office of Environmental Health & Safety (OEHS)**

The OEHS is responsible for a number of areas of safety including the following: radioactive materials and radiation producing equipment; infectious agents; mutagenic, oncogenic, and teratogenic agents; recombinant DNA; areas related to the handling of biohazards, fire and occupational safety. This office provides a number of services relating to environmental safety including consultation, training and inspections.

**4. MCVH Plant Operations**

MCVH Plant Operations is responsible for maintaining MCVH on campus buildings and facilities. This office is also responsible for providing preventative maintenance.

**5. VCU Campus Police**

The VCU Campus Police are responsible for answering police calls, patrolling both campuses providing crime prevention assistance, and investigating crimes. The security division provides guard service for various buildings and escort service during the evening hours. Off campus sites (satellite sites) are supported by local law enforcement agencies.

**6. MCVH/MCVP Risk Management Office**

The MCVH/MCVP Risk Management Office is responsible for providing risk management services to include development of systems to provide risk assessment, risk control, and claims management. This department is also instrumental in maintaining regulatory compliance with all federal, state and local regulations.

**7. Employee Health Service**

The Employee Health Service screens new employees to detect active infectious diseases, establishes baseline data for infectious disease control, and provides medical surveillance of employees working with potentially significant biohazardous, chemical carcinogens, and toxins. The Employee Health Service also provides evaluation and treatment of occupational injuries and illnesses.

# Safety Policy - Supervisor's Responsibilities

By definition, anyone who has responsibility to direct, power to control, or authority to hire, transfer, suspend, layoff, recall, promote, assign, reward, discipline, and respond to grievances or to effectively recommend such actions is considered a supervisor. All individuals who are employed in a supervisory capacity are responsible for:

1. Being thoroughly familiar with and practicing the safety policies and procedures related to their area.

2. Identifying the need for and developing procedures designed to enhance safe working practices and reduce the incidence of employee injuries.

3. Insuring that all available safety equipment is utilized.

4. Enforcing safety policies and procedures for their area either by counseling employees who fail to follow safety procedures and/or by taking disciplinary actions as set forth in applicable MCVH/MCVP policies.

5. Maintaining a supply of Workers Compensation Accident Reports (P-100) and Physician Selection Forms (P-101). (MCVP employee injuries should be reported on MCVP "Occupational Accident Report" and "Physician Selection" forms available from to the MCVP Human Resource Office 342-7617.)

   Completing the supervisor's section on all workers' compensation claims filed by their employees.

   Ensuring workers' compensation claims are delivered to Employee Health Service **within 24 hours of the accident.**

   Investigating the causes of all work-related accidents.

   Determining ways to prevent future accidents.

   Notifying the MCVP Department of Human Resources at 342-1382 of any suspected fraudulent claims.

   Accommodating employees who have medical restrictions as a result of an occupational injury/illness.

6. Insuring employees are made aware of safety policies and procedures and any changes which effect them.

7. Conducting periodic inspections of the work area to identify hazardous conditions.

8. Reporting dangerous or potentially dangerous situations to administrative personnel for corrective actions.

9. Measuring the extent the employee follows established safety practices or correcting the employee's unsafe work practices on the job.

# GENERAL SAFETY PROCEDURES

**Non-emergency Telephone Numbers**
**(Safety Resources)**

| | |
|---|---|
| **MCVP SAFETY MANAGER** | **628-0590** |
| **MCVH SAFETY & SECURITY** | **828-6595** |
| **CHEMICAL/BIOLOGICAL SAFETY** | **828-4866** |
| **MCVH EMERGENCY ROOM** | **828-9151** |
| **EMPLOYEE HEALTH SERVICE** | **828-0584** |
| **ENVIRONMENTAL HEALTH AND SAFETY** | **828-6347** |
| **FIRE / OCCUPATIONAL SAFETY** | **828-7899** |
| **POLICE (Non-emergency number)** | **_____*** |
| **RADIATION SAFETY** | **828-9131** |
| **REPAIRS** | **_____*** |
| **RISK MANAGEMENT (MCVH/MCVP)** | **828-1707** |
| **MCVP WORKERS' COMPENSATION** | **342-7617** |

* Please list applicable #s for this location.

# Chemical Safety

Chemical safety has become a large part of modern life. There are more than a half-million different man-made chemicals currently used in this country every day. Many more are introduced every year. We use chemicals not only at work, but at home as well. Cosmetics, cleaning solvents, medicines, and even the food we eat are made up of chemicals. Some chemicals such as explosives, solvents, and strong acids or bases can be extremely harmful if not handled properly. Others are relatively safe. The first step in avoiding physical harm from chemicals with which you come in contact, is to become aware of their associated hazards.

Chances are, as an employee of VCU/MCVH/MCVP, that you will work with chemicals in some way. Typical uses range from a laboratory technician who utilizes hundreds of chemicals to office personnel who may use correction fluid, copy machine toner or various cleaning agents. No matter who you are or where you work, carelessness with chemical products may result in serious injury or even death. It is essential that all employees discuss with their supervisors, the types of chemicals they will be using on the job and the hazards associated with their use. Remember, chemicals can be anywhere, and in order to handle them safely, you must be aware of the hazards they present.

# Hazard Communication

Hazard Communication, also known as the "worker's right-to-know" standard is a federal law which guarantees that all U.S. workers will be informed about workplace hazards. Employees must be told how to prevent injury from exposure to hazardous chemicals found within their work environment.

VCU, MCVH and MCVP, under the direction of the Office of Environmental Health and Safety (OEHS), has instituted a Hazard Communication Program. This is an effort to comply with regulations mandated by the Occupational Safety and Health Administration (OSHA). The following items are required under OSHA's Hazard Communication Standard:

- Each Department or work area must maintain a comprehensive chemical inventory of all hazardous materials found within that respective Department. (The list must be updated as often as necessary to keep it current.)
- Material Safety Data Sheets (MSDSs) are to be maintained for each chemical listed on the chemical inventory. Copies of the MSDSs must be accessible to all employees during all shifts.
- All containers of hazardous chemicals must be labeled with the chemical or product name and the appropriate hazard warnings of the product.
- A written program/plan must be developed to describe how compliance to the Hazard Communication Standard will be met.
- Employees must be informed of the chemical hazards in their work place, how to protect themselves from these hazards, and what to do in the event of an emergency. Employees must also be informed of the requirements of the Hazard Communication Standard.

# Material Safety Data Sheets (MSDSs)

OSHA requires that manufacturers of chemical products provide the consumers of those products with Material Safety Data Sheets (MSDSs). An MSDS can answer the following questions regarding the chemicals you work with:

- Chemical and common names of all ingredients which contribute to known hazards, and common name(s) of the mixture itself.
- Physical and chemical characteristics of the hazardous chemicals.
- Physical hazards (potential for fire, explosion, etc.)
- Known acute and chronic health effects and related health information.
- Primary routes of entry into the body (inhalation, absorption, or ingestion).
- Information on exposure limits.
- Information on whether the hazardous chemical is considered a carcinogen by OSHA, the International Agency for Research on Cancer or the National Toxicology Program.
- Precautions for safe handling.
- Generally acceptable control measures (i.e., engineering controls, work practices, personal protective equipment).
- Emergency and first aid procedures.
- Date of MSDS preparation or latest revision.
- Name, address and phone number of party responsible for preparing/distributing the MSDS.

Departments must maintain an accurate collection of MSDSs for each substance found on the chemical inventory. MSDSs are resources which can help one better understand safe handling of a chemical substance. MSDSs must be reviewed by all employees to help them fully understand the associated health hazards. MSDSs are not to be used to manage an emergency. Emergency procedures must be anticipated, planned for and reviewed before an incident occurs.

MSDSs may be obtained in a variety of ways. Departments may contact OEHS for assistance. Requests for MSDSs must be typed and include: chemical name, product number, and manufacturer's name, address and phone number. The MSDS may have been shipped directly with the product. MSDSs may be accessed via the Internet or other computer media; however, hard copies must be readily available to departmental employees. MSDSs can be obtained directly from the manufacturer or distributor - many companies will fax an MSDS immediately upon request.

## Labels and Other Forms of Warning

OSHA requires that manufacturers of chemicals label their products with the following information:

- Identity of the hazardous chemical.
- Appropriate hazard warnings.
- The name and address of the chemical's manufacturer, importer, or other responsible party.

In addition, some labels will provide information regarding:

- How to avoid injury (i.e., Avoid Exposures to Skin).
- Instructions on how to contain a leak or spill.
- Handling and storage information.
- First aid information.

If chemicals are transferred to other containers, (i.e., spray bottles), these containers must also be labeled with the identity of the chemical and the appropriate hazard warning information.

## Safe Handling of Chemicals

The following guidelines should be practiced when handling chemical substances:

- Wash your hands thoroughly after using chemical substances and especially before going on breaks or to lunch.

- Ensure all containers are properly labeled. Only use products you are absolutely sure you know how to use safely.

- Dispose of unused, old or out-dated and unlabeled chemical substances, only by proper methods outlined in this manual's section on Chemical Waste Disposal.

- Use products as they are intended to be used. Manufacturers' instructions must be followed precisely, particularly if dilution of the original product is called for.

- Use the proper personal protective equipment when it is required for the safe use of a chemical substance.

- If a spill occurs and you or a fellow worker are exposed to a hazardous chemical, contact your supervisor immediately. Be aware of the first aid procedures for the chemicals that you use.

- When storing chemicals, make sure the cover for the container is secured. Keep storage areas neat and organized. Be sure emergency exits are never blocked. Keep quantities to a minimum. Avoid buying chemicals in bulk, buy only what is necessary to complete the project.

If you have any questions regarding the safe use of chemicals in your work environment, contact your supervisor and/or the OEHS Chemical/Biological Safety Section at 828-4866. The detailed written Hazard Communication Program is included in this manual.

# Chemical Waste Disposal

OEHS is responsible for the proper disposal of chemical waste. There are many state and federal regulations regarding the handling, storage, transport and disposal of chemical waste. The following guidelines concerning chemical waste should be adhered to:

- Chemicals are not to be disposed of in the sink, toilet, or floor drains.
- Chemical waste are to be brought to OEHS for disposal. Waste appointments are accepted on Tuesdays and Thursdays from 9:00 - 10:30 a.m. An appointment can be made by calling 828-1392.
- Chemical wastes must be stored properly prior to disposal. Containers should be compatible with the waste and protected from shock or breakage.
- All containers must be properly labeled. A waste disposal form must be completed and signed by the principle investigator.
- Compressed gas cylinders should only be purchased from companies with a return cylinder policy.

If you have any questions regarding the disposal of chemical waste, please contact your supervisor and/or the OEHS Chemical/Biological Safety Section.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN CHEMICAL WASTE DISPOSAL PROGRAM.**

**INSERT PROGRAM HERE.**

# Hazard Communication Program

*Virginia Commonwealth University*
*Medical College of Virginia Hospitals*
*MCV Physicians*

Virginia Commonwealth University, under the direction of the Office of Environmental Health and Safety (OEHS), has established a Hazard Communication Program to meet the requirements of the Virginia Occupational Safety and Health (VOSH) Standard 29 CFR 1910.1200. The Hazard Communication Standard states that all workers have a "right-to-know" what hazards they may come in contact with on their job. The program requires compiling a hazardous chemicals list or inventory, obtaining appropriate Material Safety Data Sheets (MSDSs), ensuring that containers are properly labeled, and providing training to employees.

This program applies to all work operations within the University where workers may be exposed to hazardous substances under normal working conditions or during emergency situations. Due to the enormous variations in types and numbers of chemical hazards at VCU, MCVH and MCVP it is necessary to implement the program within distinct management units. These units must be delineated by either the dean, department head, director or unit manager. An individual(s) from each unit or subdivision of a unit must be made responsible for consolidating the following components of the hazard communication program for their area:

I. Hazardous Chemical Inventory
II. Material Safety Data Sheets (MSDSs)
III. Labels and Other Forms of Warning
IV. Employee Information and Training
V. Non-routine Tasks
VI. Unlabeled Pipes
VII. On-Site Contractors
VIII. Program Review

## I. HAZARDOUS CHEMICAL INVENTORY

Each unit must prepare a list of all known hazardous chemicals (products) used by the unit. The list must be updated as necessary.

## II. MATERIAL SAFETY DATA SHEETS (MSDS)

MSDSs will be received and maintained by the Office of Environmental Health & Safety for review by any employee of VCU. In addition, MSDSs must also be maintained by all Departments throughout the University. Although supervisors are responsible for providing health hazard information to all employees, they should encourage their employees to further review MSDSs for any chemical substance which they seek additional information. MSDSs are not a tool to be used to manage an emergency and they should be reviewed periodically to ensure employees fully understand the associated health hazards of the chemicals in their work environment. Personnel from the Office of Environmental Health & Safety will be available to assist employees with the information contained in the MSDS.

## III. LABELS AND OTHER FORMS OF WARNING

Each unit must ensure that hazardous chemicals are labeled with the following information:

a. chemical identity
b. appropriate hazard warnings
c. name and address of the chemical manufacturer, importer, or other responsible party.

When chemicals are transferred from the manufacturer's containers to secondary or portable containers, each unit must ensure that the containers are labeled with the identity of the chemical(s) and the appropriate hazard warnings.

## IV. WORKER'S RIGHT-TO-KNOW INFORMATION AND TRAINING

All employees will be given a brochure explaining the requirements of the Hazard Communication Standard, as well as general safety information regarding chemical hazards. Units are requested to furnish employees with supplemental health hazard information regarding the specific chemical substances which they are required to work with. Employee training will be documented through the "Worker's Right-To-Know Statement" which must be signed by the employee and the employee's supervisor. Documentation of training will be kept by the MCV Human Resources and employee's personnel files.

New employees will be required to attend a Safety Awareness Training program which will explain worker "right-to-know". They will also be provided with a copy of the "VCU Safety Awareness Program - Employee Handbook". The tape and handbook will familiarize new employees with their responsibilities and rights under the law. Once the orientation program has been completed, each new employee's supervisor is required to furnish the employee with supplemental health hazard information regarding the specific chemical substances which they are required to work with.

This training must include the following topics:

- An overview of the requirements of the Hazard Communication Standard.
- Information on the labeling system and how to use it.
- How to review MSDSs and where they are kept.
- Information on the chemicals present in the various work operations.
- Physical and health effects of the hazardous chemicals present in the work environment.
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
- Personal protective equipment and work practices to lessen or prevent exposures to chemicals.
- Steps the Department has taken to lessen or prevent exposures to chemicals.
- Safety/emergency procedures to follow if an exposure occurs.
- Location and availability of the written Hazard Communication Program, chemical inventory and MSDSs.

Re-training for all employees is required when processes change which involve additional chemical hazards and as necessary to enhance employee awareness.

## V. NON - ROUTINE TASKS

Each unit must identify all non-routine tasks. Before beginning a non-routine task, all chemical hazards must be reviewed.

## VI. UNLABELED PIPES

Work activities are often performed in areas where chemicals are transferred through pipes. These pipes are not required to be labeled; however, the employee needs to be aware of potential hazards. Prior to starting work in areas having unlabeled pipes, the employee shall contact their supervisor to determine:

a. The identity of the chemical in the pipes,

b. Potential hazards, and

c. Safety precautions.

## VII. ON-SITE CONTRACTORS

Units must provide contractors with the following information:

a. A list of hazardous chemicals to which the contractor's employees may be exposed,

b. Precautions necessary to protect employees during normal operating conditions and foreseeable emergencies, and

c. A description of the labeling system used in that unit or department.

## VIII. PROGRAM REVIEW

Each unit must review each of the above 7 components of the Hazard Communication Program annually and update them as necessary.

Assistance in training, interpretation, and implementation of this program can be obtained from OEHS.

Sample formats for Chemical Inventories and Employee Training records follow :

# CHEMICAL INVENTORY LIST & INFORMATION SHEET

Department: Responsible Person: Phone Number: Revision Date:

| Chemical Name | Common/Trade Name | Manufacturer | Typical Quantity on Hand (estimate) | Frequency of Use | MSDS on File | Emergency Procedure Required (if any) |
|---|---|---|---|---|---|---|
| **EXAMPLE:** 2 % Glutaraldehyde | CIDEX | Johnson & Johnson | 10 gallons | daily | yes | spill clean-up kit (Aldex®), SOP for cleanup/evacuation |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

# EMPLOYEE TRAINING RECORDS

**Department:** **Responsible Person:** **Phone Number:** **Revision Date:**

| EMPLOYEE NAME | JOB TITLE | SSN | TRAINING DATE | TRAINING CONTENT |
|---|---|---|---|---|
| EXAMPLE: Flo Nightingale, RN | Nurse Anesthesiologist | 555-55-5555 | 1/31/96 | Hazard Communication, Universal Precautions, TB Prevention |
| | | | | |
| | | | | |
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**The following 2 unnumbered pages include the,**

1. The brochure titled **"Employee Right-To- Know"** (2 pages)

Copies of this brochure should be given and explained to all new employees.

# Laboratory Safety Program

The VCU Laboratory Safety Program was developed in an effort to meet the requirements of the Occupational Safety and Health Administration (OSHA) Standard, CFR 1910.1450 - Occupational Exposures to Hazardous Chemicals in Laboratories. The purpose of the Standard is to protect employees from health hazards associated with hazardous chemicals in the laboratory and to keep exposures below the permissible exposure limits. Laboratory workers have a "right-to-know" what hazards they may come in contact with on their job. This standard attempts to facilitate this right.

The Laboratory Safety Standard supersedes many of the requirements of the Hazard Communication Standard for laboratories. The program requires compiling of a hazardous chemicals list, attaining appropriate Material Safety Data Sheets (MSDS), ensuring that containers are labeled, developing written standard operating procedures for laboratory operations and providing training to employees.

This program applies to all laboratory operations within the University and hospital where workers may be exposed to hazardous substances. Due to the enormous variation in types and numbers of laboratories at VCU/MCVH/MCVP, it is necessary to implement the program within distinct laboratory units. These laboratory units must be delineated by either the dean, department head, director or laboratory manager. An individual(s) from each laboratory unit must be made responsible for implementing the Chemical Hygiene Program (CHP). This individual is referred to by OSHA as the Chemical Hygiene Officer.

## I. Chemical Hygiene Plan (CHP)

Under the Standard, employers that use hazardous chemicals in the laboratory must develop and carry out the provisions of a written CHP. The CHP must include the necessary work practices, procedures, and policies to ensure that employees are protected from all potentially hazardous chemicals in their laboratory. Elements of a CHP include:

a. standard operating procedures (SOPs) relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals
b. the procedures used to determine control measures (i.e. exhaust ventilation, personal protective devices)
c. steps to ensure that these controls are operating properl
d. employee training methods and information
e. circumstances where an employee must request permission to conduct a particularly hazardous procedure
f. provisions for medical consultation and examinations
g. designation of a Chemical Hygiene Officer
h. provision for additional employee protection for work with particularly hazardous substances including:

    1. establishment of a designated area
    2. use of fume hoods or glove boxes
    3. procedures for waste removal
    4. decontamination procedures

All laboratory managers will be provided with a model chemical hygiene plan by OEHS. The model CHP provides the chemical hygiene officer with the necessary foundation to complete the requirements of the standard. Specific training on the laboratory safety program and generic lab safety topics are provided by OEHS.

## II. Hazardous Chemical Inventory List

Each laboratory unit must prepare a list of all known hazardous chemicals used. The list must be updated as necessary.

## III. Material Safety Data Sheets (MSDS)

MSDS will be received and maintained by the Office of Environmental Health & Safety for review by any employee of VCU. In addition, MSDSs must be maintained by all departments throughout the University. Although supervisors are responsible for providing health hazard information, they should encourage their employees to further review MSDS for any chemical substance which they seek additional information. Personnel from the Office of Environmental Health & Safety will be available to assist employees with the information contained in MSDS. A brochure is available from OEHS which provides additional information to help.

## IV Labels and Other Forms of Warning

Each laboratory must ensure that hazardous chemicals are delivered with the manufacturer's original label. When chemicals are transferred from the manufacturer's containers to secondary containers, the containers must be labeled with the identity of the chemical(s) and appropriate hazard warnings.

## V. Program Review

Each unit must review each of the above components of the Laboratory Safety Program annually and update them as necessary.
Assistance in training, interpretation, and implementation of this program can be obtained from the OEHS, Chemical & Biological Safety Section - 828-4866.

# Laboratory Safety Guidelines

1. Smoking and consumption of food/beverage is prohibited in the laboratory work area.

2. Flammable and toxic materials shall be worked with inside of an explosion-proof exhaust hood.

3. Keep floors and aisles clear of obstructions.

4. When working with hazardous substances:

   a. Do not wear contact lenses.

   b. Always wear safety glasses.

   c. Wear appropriate protective apparel, such as gloves, lab apron, etc.

   d. Know the properties of the substances you are working with. Read the Material Safety Data Sheets.

5. Know the locations of emergency showers and eye-wash stations, and how to operate these devices.

6. Irrigate eyes continuously for at least 15 minutes whenever a substance is splashed into them. Unless there is also trauma, it is generally not advisable to go to the Emergency Department first, as this will delay irrigations of the eyes and more serious injury may result. Call a physician to the scene where felt necessary.

7. Use only equipment which has been safety checked by authorized personnel. Do not use equipment which is past the due date for re-inspection and/or calibration.

8. Do not place flammables into refrigerators unless they are designed as explosion-proof and so marked.

9. Store flammables in safety cans and safety cabinets.

10. Strong acids, strong bases, and flammables should always be stored separately . Do not place acids or bases into safety cabinets, which are only for the storage of flammable materials.

11. Store acids and bases on the lowest level possible, to minimize damage should the container break.

12. All containers must be labeled to indicate their content, and whether it is flammable, toxic, corrosive, highly reactive, or infectious. Unlabeled containers must be promptly discarded, even if a person "knows" what is in it.

13. Read and observe all applicable safety policies and procedures in this manual, including those for flammable and compressed gases.

14. Dispose of glass, needles and other sharp objects only into the labeled sharps containers which are provided.

15. Dispose of hazardous waste properly. Contact the Office of Environmental Health and Safety when in doubt about a substance. The following is a listing of some common lab chemicals which must be disposed of as hazardous waste:

**Xylene**
**Formalin/Formaldehyde**
**NiCad** and all other rechargeable batteries

**Acetone**
**Methanol**
**Lead** (Anything containing lead)

**Picric Acid**
**Glutaraldehyde (Cidex)**
**Mercury** in any form. Most commonly this is **HgCl** in fixatives used in Bacteriology.

# Asbestos Program

The *VCU Asbestos Program* was developed with the intent of protecting faculty, staff, students, and patients from asbestos exposure hazards within University and hospital community. *Asbestos-containing materials* (ACM) are common within several University and hospital structures. Abatement of ACM must occur prior to undertaking renovation or demolition activities within affected areas. OEHS, Chemical/Biological Safety Section staff provide key services throughout the abatement process, including: conduction of asbestos inspections in scheduled renovation areas to identify ACM; development of asbestos removal designs and project specifications; monitoring of abatement contractor work practices; collection of air quality samples during the removal process; and provision of quality control services during the abatement process to ensure that affected areas are suitable for reoccupation.

OEHS staff must frequently respond to asbestos emergency inspection requests which may involve a wide array of situations, ranging from isolated areas of suspect materials disturbed by routine maintenance activities to large-scale incidents such as collapsing of ceiling sections. OEHS staff inspect the affected areas (may involve the collection of bulk and/or air quality samples), determine the related degree of asbestos exposure hazard to University employees and develop appropriate hazard response actions.

OEHS staff also provide an array of asbestos training services to University and MCVP personnel. Two Hour Asbestos Training is conducted annually for all designated employees. OEHS provides all new employees with basic information concerning asbestos hazards during the orientation process. OEHS staff, upon request, also attend formal and informal meetings in order to address employee questions and concerns involving scheduled abatement projects or other asbestos issues within the workplace.

The written Asbestos Program is maintained on file within the Chemical/Biological Safety Section Office of OEHS. The Asbestos Program details all elements of the University asbestos management practices including: portfolio requirements for asbestos abatement contractors, bulk sampling and air sampling protocols, an outline of asbestos awareness training programs, and Operations and Maintenance (O&M) Plans and/or Management Plans for a limited number of University buildings. While O&M and Management Plans have not to date been completed for all structures, OEHS maintains a database which compiles information from past inspections, providing vast knowledge concerning the locations, condition and related hazards of ACM in nearly all areas of University buildings. File information concerning asbestos in specific University and hospital buildings can be obtained through contacting OEHS Chemical/Biological Safety Section at 828-4404.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN VCU ASBESTOS PROGRAM. INSERT PROGRAM HERE.**

# Ethylene Oxide Program

Ethylene oxide is a sterilization gas utilized by Central Supply. It is a flammable liquid, and its vapors can easily form explosive mixtures in air. Ethylene oxide has been shown to present a carcinogenic, mutagenic, genotoxic, reproductive, neurologic, and a sensitization hazard to workers. As a result, the Occupational Safety and Health Administration (OSHA) has issued a standard (29 CFR 1910.1047), to assure proper protection of all workers exposed to ethylene oxide gas. The OSHA standard establishes a permissible exposure limit (PEL) of 1.0 part ethylene oxide per million parts of air (1.0 ppm), as an eight hour time-weighted average, and a short term exposure limit (STEL) of 5.0 ppm for 15 minutes. In order to assure that all workers with the potential for an exposure to ethylene oxide are adequately protected, the Office of Environmental Health and Safety (OEHS) conducts ethylene oxide personal and area monitoring, as well as provides consultation services to insure that ethylene oxide exposures do not exceed the PEL or STEL during the work day. Exposure monitoring is conducted at a minimum at least quarterly or whenever there is a change in production equipment, process, personnel or control measures which may result in new or additional exposures to ethylene oxide. Requests regarding information on the ethylene oxide monitoring program should be directed to OEHS, Box 980112, MCV Station, (828-4866). In addition the MCV Epidemiology Department may be contacted for copies of the MCVH Sterilization/Disinfection Policy.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN ETHYLENE OXIDE PROGRAM.**

**INSERT PROGRAM HERE.**

# Formaldehyde Program

Formaldehyde is used in a variety of operations throughout the University and Hospital, but tissue preservation is the primary source of exposure. Work areas specifically known to use formaldehyde include the Departments of Anatomy, Biology, Dialysis, Pathology and the Morgue. Potential health hazards associated with an exposure to formaldehyde include cancer, irritation and sensitization of the skin and respiratory system, eye and throat irritation and acute toxicity. As a result, the Occupational Safety and Health Administration (OSHA) has issued a standard (29 CFR 1910.1048), to assure proper protection of all workers exposed to formaldehyde. The OSHA standard establishes a permissible exposure limit (PEL) of 0.75 parts formaldehyde per million parts of air (0.75 ppm), as an eight hour time-weighted average, and a short term exposure limit (STEL) of 2.0 ppm for 15 minutes. In order to assure that all workers with the potential for an exposure to formaldehyde are adequately protected, the Office of Environmental Health and Safety (OEHS) conducts formaldehyde personal and area monitoring, as well as provides consultation services to insure that formaldehyde exposures do not exceed the PEL or STEL during the work day. Exposure monitoring is conducted at a minimum at least quarterly, or whenever there is a change in production, equipment, process, personnel or control measures which may result in new or additional exposures to formaldehyde. Requests regarding information on the formaldehyde monitoring program should be directed to OEHS, Box 980112, MCV Station, (828-4866).

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN FORMALDEHYDE PROGRAM.**

**INSERT PROGRAM HERE.**

# Glutaraldehyde (Cidex) Program

Glutaraldehyde is a disinfectant that is especially effective for cold sterilization of instruments. As a disinfectant, glutaraldehyde has been used to clean sputum mouthpieces, suction bottles and tubing, and equipment used for ear, nose and throat treatments. It is widely used in endoscopy suites to clean and disinfect endoscopes. Potential health hazards associated with an exposure to glutaraldehyde include irritation of the eyes, throat, and lungs; cough; chest tightness; headache; and, asthma or flu-like symptoms. As a result, the Occupational Safety and Health Administration (OSHA) has issued a standard to assure proper protection of all workers exposed to glutaraldehyde. The OSHA standard establishes a permissible exposure limit (PEL) of 0.2 parts glutaraldehyde per million parts of air (ppm), as an eight hour time-weighted average. This is a ceiling value limit which means this limit shall not be exceeded during any part of the work day, even for a brief period. In order to assure that all workers with the potential for an exposure to glutaraldehyde are adequately protected, the Office of Environmental Health and Safety (OEHS) conducts area monitoring, as well as provides consultation services to insure that glutaraldehyde exposures do not exceed the ceiling limit. Exposure monitoring is conducted at a minimum at least quarterly, or whenever there is a change in production, equipment, process, personnel or control measures which may result in new or additional exposures to glutaraldehyde. Requests regarding information on glutaraldehyde should be directed to OEHS, Box 980112, MCV Station, (828-4866). In addition the MCV Epidemiology Department may be contacted for copies of the MCVH Sterilization/Disinfection Policy.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN GLUTARALDEHYDE PROGRAM.**

**INSERT PROGRAM HERE.**

# Lead Program

Lead containing paint or surface coatings may be found in almost any structure regardless of the age of the building. The inadvertent release of lead dust or fumes from construction activities represents a potential health hazard to workers in adjacent areas. Lead dust or fumes may be inhaled, ingested or both. The VCU Lead Inspection Program is designed to identify lead containing surface coatings that may present a potential hazard to workers performing renovation or construction activities on the material. OEHS will assist departments in the selection of appropriate control measures, work practices, and personal protection equipment. All painted surfaces must be inspected for lead prior to any abrasive or destructive work being performed. For assistance contact the OEHS, Chemical & Biological Safety Section at 828-1392.

# Mercury Handling Procedures

The office of Environmental Health & Safety, Chemical & Biological Safety Section, helps manage mercury spills in the University & Hospital environments. Areas utilizing instruments containing mercury (i.e., more than 10cc) should have a mercury spill kit on the floor and have individuals trained in the proper management of mercury spills.

During the hours of 7:30 a.m. to 4:30 p.m., Monday through Friday (excluding holidays), contact OEHS at 828-1392 for assistance with mercury spills. OEHS can be contacted after hours at 828-9834.

All mercury spills must be reported to OEHS (during regular hours). OEHS staff will ensure that proper cleanup has been performed by monitoring the area for mercury vapor.

# Nitrous Oxide Program

Waste anesthesia gases, although not yet covered by federal regulations, have long been recognized as possible health hazards to operating room personnel. Many different materials are used along with nitrous oxide to anesthetize patients; but, the nitrous oxide component of anesthetic gas mixtures is generally regarded as an indicator of employee exposure. Nitrous oxide is used in general surgery, oral surgery and in ambulatory surgery. It is the objective of the nitrous oxide program to ensure that the employees of the University, Hospital and MCVP communities are not exposed to concentrations of nitrous oxide which exceeds the recommendations of the National Institute for Occupational Safety and Health (NIOSH) and the Joint Commission for Accreditation of Healthcare Organizations (JCAHO). NIOSH guidelines recommend that no worker be exposed to time-weighted average concentrations greater than 25 parts nitrous oxide per million parts of air (25 ppm) in hospital operating rooms and 50 ppm in dental operatories. The Office of Environmental Health and Safety (OEHS) conducts periodic monitoring of nitrous oxide concentrations in the affected areas of the Hospital and University to determine occupational exposures. Monitoring is conducted at a minimum at least quarterly, or whenever there is a change in production, equipment, process, personnel or control measures which may result in new or additional exposures to nitrous oxide. Any requests concerning information about the nitrous oxide policy should be directed to OEHS, Box 980112, MCV Station, (828-4866).

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN NITROUS OXIDE PROGRAM.**

**INSERT PROGRAM HERE.**

# Respiratory Protection Program

The *VCU Respiratory Protection Program* is designed to ensure the proper selection and use of respirators in the workplace. Respirators encompass a wide range of equipment from dust/mist respirators (dust mask) to self contained breathing apparatus (SCBA). Respiratory protection may not be used as a substitute for engineering controls and generally may only be used in situations where engineering controls are not feasible, during certain maintenance activities, or while engineering controls are implemented. The Respiratory Protection Program addresses, selection, fit testing, training, maintenance/cleaning, storage and medical surveillance. Employees/students must be fit tested, trained, and placed under a medical surveillance program prior to being allowed to wear respiratory protection. The program can be tailored to meet the specific needs and hazards associated with your workplace. OEHS will assist departments in implementing a program. All respiratory protection used by University personnel must be approved by OEHS. For further assistance on the *VCU Respiratory Protection Program* please contact the OEHS, Chemical/Biological Safety Section at 828-4866.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN RESPIRATORY PROTECTION PROGRAM.**

**INSERT PROGRAM HERE.**

# Indoor Air Quality

The purpose of the VCU Indoor Air Quality (IAQ) inspection program is to identify allergens, airborne contaminates, or other sources that adversely effect the environment. Areas generally affected include classrooms, office, or areas where sedentary work is performed in energy efficient or closed buildings.

Symptoms of IAQ problems typically include: cough, eye irritation, headache, and allergic reactions.

Minimally, the OEHS, Chemical/Biological Safety Section will monitor the following environmental parameters in order to try to identify and mitigate IAQ problems:

Temperature
Relative Humidity
Carbon Dioxide
Illumination
Visual check for mold, mildew
Room air flow

Additionally, volatile organic compounds (VOCs), oxides of nitrogen, formaldehyde, carbon monoxide, and sulfur dioxides may be monitored if necessary.

In many instances, it will be necessary for the department to arrange for some type of facility adjustment (i.e., having heating, ventilation, air conditioning equipment cleaned or adjusted).

If you would like additional information on IAQ inspections at VCU, please contact 828-4866.

# Odor Complaints

Similar and perhaps related to IAQ complaints, *odor complaints* are a relatively common occurrence within the university and hospital. In general, odors arise from the ventilation or plumbing systems. They are transitory in nature, and therefore difficult at times to isolate. The OEHS, Chemical & Biological Safety Section staff will respond as quickly as possible to try and identify the source of the odor. Responses include visual walk-around inspections, monitoring for volatile organic compounds (VOCs) via a photo ionizing detector (PID), and on some occasions, initiation of an IAQ investigation. Requests for odor investigations should be directed to 828-4866.

# Compressed Gas Safety Guidelines

More than a dozen gases commonly used are supplied in pressurized cylinders. The gases are supplied in this way simply because more gas can be shipped, stored, and distributed to a work area under high pressure than can be at atmospheric pressure. Gases under high pressure can be hazardous if not used properly. Therefore, the following basic safety rules must be followed to ensure safe use of cylinders in the workplace.

## General Guidelines for Cylinder Use

- Always chain gas cylinders upright to a wall, cylinder truck, or cylinder rack or post. This rule is especially important when the gas is in use because the regulator is on the cylinder valve and the cap is not in place. It is dangerous to store cylinders in any position other than upright. These rules apply to full or empty cylinders.

- Always replace the cylinder cap when the cylinder is not in use and when it is being moved.

- Never lift a cylinder by its valve or its cap, or with chains, slings, or magnets. Cylinders should only be moved by a cylinder hand cart or cylinder dolly.

- Never place cylinders near elevators or in hallways, passageways, or work areas where they could be struck or hit by large objects.

- If a cylinder is leaking, mark it and put it outdoors, away from all sources of ignition. Post warning signs on it and keep it well away from other cylinders. Call the cylinder supplier or gas distributor to manage the leaking cylinder.

- Do not use cylinders as table legs to hold up other objects.

- Never hammer, pry, or wedge a stuck or frozen cylinder valve to loosen it, and never use a wrench. If a valve will not open by hand, call the supplier or gas distributor.

- Do not drop a cylinder.

- Do not allow grease, oil, or other combustible materials to touch any part of a cylinder. This rule is especially important when oxygen cylinders are involved. Grease or oil that oxidizes very slowly in air will burst into flame in pure oxygen.

- Never use a cylinder unless the gas it contains is clearly stenciled on it or marked with a decal. Altering or defacing the name, numbers, or other markings on a gas cylinder is illegal and hazardous. Do not paint a cylinder.

- Do not rely on the color of a cylinder to identify the gas inside. Different suppliers use different color codes. Return an unidentifiable cylinder to the supplier.

- Keep cylinders away from electrical circuits and excessive heat. Cylinders are made of steel and therefore will conduct electricity.

- Never ground a cylinder or place it near an electrical conductor, including piping, plumbing, or anything that might carry stray electric current.

- Never strike an arc or tap a welding electrode on a cylinder.

- Keep cylinders away from sparks. Keep cylinders out of direct sunlight.

- If a cylinder that has been stored outside is frozen to the ground, use only warm water to free it. If the valve is frozen, use only warm water to thaw it, or bring the cylinder inside and let it thaw at room temperature.

- Abandoned or stray cylinders (cylinders found in hallways or corridors) will be disposed of at the expense of the offending department. Call the supplier to pick-up empty cylinders.

- No smoking is allowed in any area where an oxygen cylinder is present, including rooms where a flow meter is plugged into the wall outlet. Signs must be posted to designate these locations as no smoking areas (If whole building is signed and designated “No Smoking” additional individual room signs are not required .

- Cylinders of compressed gases should be accepted only if equipped with protective stem covers and valve covers and are properly labeled.

- Cylinders should only be purchased from companies with a return cylinder policy. The cost of disposing of a cylinder, purchased from a company without a return policy, will be the responsibility of the department who originally purchased the cylinder.

## Valves and Regulators

- Gas regulators reduce the pressure inside the cylinder to a safe level for use. They are designed for use with specific gases, within prescribed pressure ranges. Always use the proper regulator for the gas in the cylinder.

- Always check the regulator before attaching it to a cylinder. If the connections do not fit together readily, the wrong regulator is being used. Damaged threads on the connecting nut or valve outlet can also make a regulator difficult to attach and likely to leak. Remove regulators from service if the glass in the gauge face is broken.

- Always “crack” the cylinder valve (open it slightly and close it immediately) before attaching a gas regulator to any cylinder - except a hydrogen or fuel gas cylinder. Cracking removes any dirt that may be lodged in the valve outlet, and prevents dirt from entering the regulator. Do not stand in front of the valve outlet while cracking it, and do not point the outlet at anyone. Never put your hands in front of the escaping gas.

- Wipe the outlet with a clean, dry, lint-free cloth once the cylinder valve has been cracked. The threads and mating surfaces of the regulator and hose connections should also be cleaned before the regulator is attached.

- Always use a cylinder wrench or other tightly fitting wrench to tighten the regulator nut and hose connections.
- Attach the regulator securely before opening the valve wide.
- Stand to the side of the regulator when opening the cylinder valve.

### Leaks and Contamination

- Once regulators and hoses have been attached they should be tested for leaks. (Apply soapy water to the valves, joints, connections, and around the regulator gauges. If bubbles appear, a leak is present.)
- Never hang tools, gloves, lab coats or other clothing on top of the cylinder. They may interfere with the operations of the valve and prevent the gas from being shut off quickly in an emergency. In addition, clothes hung on an oxygen cylinder can become saturated with oxygen if there is a leak at the valve or connecting threads. Oxygen-saturated clothes will burn intensely if they come in contact with an ignition source, even a small spark.

### Removal of Regulator

- Close the cylinder valve first.
- Bleed off the gas remaining in the regulator.
- Unscrew the regulator.

**NOTE:** If a regulator is removed from an open-valved cylinder, the gas pressure would probably blow the regulator clear through the work area.

Faulty equipment should be taken out of service at the first sign of a leak or a mechanical problem. Keeping an eye on regulator gauges often reveals defects before they become serious. If the pointer on a regulator's low-pressure gauge creeps upward when the downstream line is closed, the regulator is defective. If the pointer fails to move from its stop pin when the regulator is pressurized, the gauge is faulty. And, if the pointer fails to return against the stop pin when the pressure is released, the equipment is defective and should be repaired. Have defective or faulty equipment taken out of service immediately and repaired only by properly qualified and authorized personnel.

## Cylinder Storage

Rules for storing gas cylinders complement, but differ from, rules for using them. Although storage rules depend somewhat on the kind of gas in the cylinder, some general rules apply:

- Store all cylinders in designated areas.
- Store and use cylinders on a first-in, first-out basis.
- Label every cylinder with the name of the gas it contains. Never remove identifying labels. Never paint a cylinder.
- Chalk “MT” or “empty” on all empty cylinders.
- Keep all empty cylinders for the same kind of gas together. Separate full cylinders from empty ones.
- Keep fuel-gas cylinders well away from oxygen cylinders. OSHA regulations require that oxygen cylinders in storage be separated from fuel-gas cylinders and combustible materials by at least 20 feet or by a noncombustible barrier at least 5 feet high and having a fire-resistance rating of at least half an hour.
- Store cylinders outside whenever possible, but always protect them from the weather and from direct sunlight. Cylinders that must be stored inside should be placed in a dry, well-ventilated storage area, preferably constructed of fire-resistant materials. Never store any gas cylinder where the temperature may rise above 130 F.
- Never store cylinders near elevators, hallways or corridors.
- Place caps on cylinders that are being stored or moved.

Precautions, procedures and information on the safe handling and storage of cryogenic liquids will be handled on a case by case basis and may be obtained by contacting the Chemical and Biological Safety Office at 828-4866.

# Biological Safety

## Regulated Medical Waste Program
## (This plan applies to all MCVH/MCVP Facilities)

The purpose of the regulated medical waste policy is to establish procedures pertaining to the management of regulated medical waste in the University community so as to protect the health and safety of employees and to enhance the environment and natural resources. The Virginia Department of Environmental Quality (VDEQ) has issued guidelines for handling regulated medical waste. In these guidelines, the VDEQ has defined characteristics which classify waste as regulated. In general, a waste will be considered capable of producing an infectious disease if it has, or it may have, been contaminated by an organism that is pathogenic to humans, such an organism is not routinely and freely available in the community and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. Examples of these types of waste include: cultures and stocks of microorganisms and biologicals; blood and blood products; pathologic wastes; contaminated, used or broken sharps; animal carcasses, body parts, bedding and related waste; or any other miscellaneous waste that may have been used in the clean up of a spill of any other regulated medical waste. It is the intent to comply with all state and federal regulations regarding the management of regulated waste. Therefore, generators of regulated medical wastes are responsible for the proper handling, storage and disposal of these wastes. Central management of the University's regulated medical waste program is under the Office of Environmental Health and Safety (OEHS) and any request concerning information or regulated medical waste policies within the University should be directed to OEHS, Box 980112, MCV Station, (828-4866). For MCVH/MCVP infectious waste information, please see the MCVH/MCVP policy.

**IF YOU DETERMINE THAT THIS PROGRAM IS APPLICABLE TO YOUR DEPARTMENT/UNIT, PLEASE CONTACT 828-4866 TO OBTAIN A DETAILED WRITTEN REGULATED MEDICAL WASTE PROGRAM.**

**INSERT PROGRAM HERE.**

# Pregnancy Policy, Mutagenic, Teratogenic and Infectious Agents

The purpose of this policy is to establish guidelines to be followed when female employees working with mutagenic, teratogenic and/or infectious agents, either become pregnant or consider conception. These guidelines supplement but do not supersede or replace the present policy for infectious agents, or the Nuclear Regulatory Commission's requirement set forth in the University's By-Product Materials License.

Should a female employee working with mutagenic, teratogenic or infectious agents become pregnant, or consider conception, it shall be her responsibility to contact the Employee Health Office. The Employee Health physician, in conjunction with the Office of Environmental Health and Safety, will assess the potential embryo/fetus risk associated with the materials found in the employee's routine working environment. A summary of these findings will be distributed to the employee, her immediate supervisor, and to the Human Resources office.

The Employee Relations office will be responsible for counseling the employee and discussing the options available regarding employment status. The employee may choose to:

1. Apply for a transfer (permanent or temporary) in assignment to a lower risk area. Transfers are not guaranteed; however, every effort will be made to accommodate such a transfer.

2. Elect to go on a leave of absence.

3. Remain in her current position during her pregnancy. If the employee elects to remain in her current position, the employment relations counselor will schedule a conference for the employee with the Employee Health physician. It will be the responsibility of the Employee Health physician to once again inform the employee of the risks involved. The employee once she has had an opportunity to ask questions about the risks being taken will be asked by the Employee Health physician to sign a statement that she understands and accepts the risks involved.

# Bloodborne Pathogens

All workers with potential exposure to human blood, blood products or body fluids are covered under OSHA BLOODBORNE Pathogens regulations. The MCVH/MCVP Preventative Medicine Guidelines section on Bloodborne Pathogens covers all personnel so exposed. The MCVH Epidemiology Department should be contacted at 828-2121 for any questions concerning this policy.

# Chemical/Biological Safety Training

Many employees use hazardous materials in both university and hospital work settings. Two major programs have been established to provide the necessary safety training. Laboratory workers who use hazardous chemicals are covered by OSHA's Laboratory Standard; affected employees include those in dental, physician, animal, hospital, pharmaceutical, research and academic laboratories. All other employees are covered by OSHA's Hazard Communication Standard, also known as Worker's-Right-to-Know. In addition, some employees must be apprized of other potential on-the-job hazards, such as asbestos, ethylene oxide, formaldehyde, nitrous oxide, or recombinant DNA.

The Chemical/Biological Safety Section has developed training classes and written programs in these areas. Below are listed the courses and manuals available to appropriate personnel.

| **Training Course *** | **Target Audience** |
|---|---|
| Asbestos Awareness | Facilities Management employees |
| Hazard Communication | All paid workers |
| Hazard Communication In-service | Specific for area, as requested |
| Laboratory Safety | Laboratory workers using hazardous chemicals |
| Respirator Training and Fit -Testing | Specific for area, as requested |

*(Course Numbers are subject to revision. Contact the OEHS Training Coordinator at 828-0040 for updated course numbers)

| **Training Manual** | **Target Audience** |
|---|---|
| Asbestos Program | Facilities Management Superintendents |
| Chemical Waste Management | Program Laboratory supervisors |
| Ethylene Oxide Program | Supervisors of sterilization workers |
| Formaldehyde Program | Laboratory supervisors |
| Nitrous Oxide Program | Supervisors of anaesthesia workers |
| Chemical Carcinogen Biohazard and Recombinant DNA Safety Guide | Principal Investigators using those materials |
| Chemical Hygiene Plan (generic) | Chemical Hygiene Officers |
| Respiratory Protection Program | Chemical Hygiene Officers/PPD & PlantOperations Management, as needed |
| Hazard Communication Brochure | New employees |
| Regulated Medical Waste Program | Supervisors in areas handling body fluids and tissues |

Questions and requests for written materials should be directed to the Chemical/Biological Safety Section of OEHS at 828-4866.

# Fire Safety

Familiarize yourself with at least two ways to exit your building in the event of a fire emergency. Make it a habit to look for two ways out of all buildings.

If you hear a fire alarm, do not wait to be told to leave. Leave immediately, using the nearest stairs. Direct all visitors, students, and patients to leave as well. (**EXCEPTION**: Staff in **Main and North Hospitals**, in the absence of smoke or flame, will listen for telepage instructions as to the location of the Dr. Red before actually evacuating. If smoke or flame is visible, follow R.A.C.E.R. procedures immediately.)

## General Fire/Emergency Evacuation Procedures

### Before A Fire/Emergency

* Know the location of fire alarm pull stations and how to use them.
* Know the location of the nearest stairwells for your area.
* Know the locations of, and how to use, the portable fire extinguishers in your area.
* Know your designated meeting area away from the building
* Know your floor's evacuation coordinator (they should wear a red armband during evacuations)
* If you need special assistance during an evacuation, please contact your evacuation team representative beforehand.

### On Discovering a Fire

* **Rescue** anyone who is in immediate danger.
* **Activate** an alarm **and call 911** to give the location and description of the fire. These numbers should be posted on phones.

  The name and **street address** of this location is (Fill in Box):

| |
|---|
| _____ |
| _____ |
| _____ |

* **Close** all doors (unlocked) and windows in the vicinity of the fire to contain smoke.

C **Extinguish** the fire (Only small fires and only if you have been trained in the proper use of fire extinguishers)

* **Relocate** to a safe area, go to the nearest stairwell and leave the building under the direction of the Floor Monitors, who are identified by red arm bands. (Staff in Main and North Hospitals follow pre-determined Internal Emergency Preparedness Plans for relocating patients.)

    * **Do not use the elevators.**

    * If the exit is blocked by fire, heat, or smoke, go to another exit. If all exits are blocked, return to your room, close the doors and call 911 to report your location.

**If you are an Evacuation Coordinator (Person trained and responsible for the evacuation program in each building):**

* Call the emergency number, **911** and let them know you are evacuating. These numbers should be posted on phones.

  The name and **street address** of this location is (Fill in Box):

  _____

  _____

  _____

* Go to the designated area outside the building to meet the floor monitors as they finish evacuating their sections.

* Keep track of which floor monitors have reported and which ones have not.

* When the fire department arrives, give them any information that you have, including which areas have not been evacuated.

* Use the floor monitors to help keep people away from the building.

* After the emergency, get permission from the fire department before reentering the building.

* Inform the Police or Fire personne, on the scene, if there is anyone who refuses to evacuate.

* Give the fire department the locations of anyone who is unable to evacuate.

**<u>If you are a Floor Monitor</u> (person responsible for evacuating a specific area, usually a floor):**

* When the alarm sounds, go door to door telling everyone in your section that they must leave the building. Ask them to close the door as they exit the room.

* Start at the furthest point from the exit you will be using and work back towards the exit.

* Direct people to their nearest exit.

* After everyone in your section has been told to evacuate, report to the Evacuation Coordinator:

  l. Your area is clear, or

  2. There is someone in your area that refuses to evacuate, and/or

  3. There is someone in your area that is unable to evacuate, and/or

  4. Any other information, such as if the fire is in your area.

## Evacuation Procedures For Individuals With Disabilities

* A disabled individual is defined as anyone with a permanent or temporary disability, who for whatever reason, is unable to evacuate a building using the stairwell.

* Physically disabled persons who are unable to evacuate, should be advised to remain in the room, preferably with a volunteer partner, and <u>close the door to the corridor.</u>

* If the individual is unable to remain in the room, because of smoke or another danger, advise the individual to go to the nearest stairwell. Ask a volunteer to remain in the stairwell with the individual.

* If you have knowledge of a physically disabled person remaining in the building, upon exiting the building **immediately** notify the Police, or Fire personnel (or as soon as they arrive on the scene) of the exact location of the disabled individual. (You must, of course, assure that the fire has been reported by activating a pull station prior to leaving the building.)

* The fire department will arrive within minutes to help complete the evacuation. The messenger should communicate your location to the Evacuation Coordinator, Police or Fire personnel.

# Fire Extinguishers

Fire extinguishers are to be used only after the evacuation plan of the building is underway. The VCU Office of Environmental Health and Safety offers training classes on how to use a fire extinguisher. Call 828-7899 to schedule a class for you or your department. If you know how to use an extinguisher, locate and identify the ones in your area…before you need them. OEHS supplies and maintains several kinds of fire extinguishers.

* Class A: for wood, paper, and cloth
* Class B: for grease, paint, and gasoline
* Class C: for fires involving energized electrical equipment
* Class ABC: for all fires, except combustible metals

Remember, only use an extinguisher after you start the emergency evacuation procedures.

# Occupational Safety

Your safety on the job is a concern to us. The MCVP Sfatey Office, MCVH Safety and Security Office and the VCU Occupational Safety Section of the Office of Environmental Health and Safety is available to assist you in your goal of an accident free work environment. The Occupational Safety Section is responsible for ensuring that regulations established by Virginia Occupational Safety and Health (VOSH) are communicated to administration and the appropriate actions taken. The section is responsible for safety policy and procedure development, implementation, monitoring and documentation. This is achieved through close cooperation between OEHS, University, MCVH and MCVP staff. OEHS provides direct and /or contract assistance to departments as well as active committee membership in order to carry out this critical function.

Your supervisor is responsible for seeing that you have knowledge and skills necessary to operate in the university, clinic, and hospital environment. The Occupational Safety Section can provide assistance when safety questions arise at 828-0040.

# REPORTING OF ON-THE-JOB INJURIES/ILLNESSES

Under of the provision of the Workers' Compensation Act (the Act), the University is required to provide certain benefits to employees who incur an injury/illness in the course of official work-related duties. All University employees (faculty, full-time staff, part-time staff, and hourly workers), (**NOTE: MCVP** employee procedures are detailed following this section) are eligible to receive workers' compensation benefits:

- If an employee should incur a work-related injury or occupational disease, they **should notify their supervisor as soon as possible** so that they do not forfeit any rights they may have to workers' compensation.

- The **employee and supervisor** should then complete the University's **Accident Report of Workers' Compensation Claim** form, **P-100**, **within 24 hours** of the accident/illness. This form is available from the Worker's Compensation Office at 828-1533.

- The **employee is required** to select a physician to treat his/her injury/illness from the panel of physicians listed on the **Physician Selection for Occupational Injuries/Diseases** form, **P-101.**

- Both forms listed above should be made available in every department. A supply of the forms can be ordered by contacting the Workers' Compensation Office at 8-1533.

- The completed forms should be sent or taken directly to **Employee Health Services**, First Floor, West Hospital, Box 980134.

- Employee Health completes the medical information on the claim form and forwards the claim to the Workers' Compensation Office.

- All claims for workers' compensation are then forwarded to the state's Division of Risk Management (DRM) upon receipt by the University's Workers' compensation Office.

- DRM reviews the claim and determines if it is covered under the provisions of the Act.

- Although an employee may have been injured at work, the claim may not always be considered compensable under the workers compensation laws in Virginia.

- The employee's injury must be determined to be " by accident" and "arising out of and in the course of employment" in order to be covered under the Act. In other words, the employee must have been injured by an unusual and unexpected event which occurred in the performance of his/her duties. The accident must also have happened suddenly and at a specific time. Injuries caused by misconduct, failure to use safety equipment, repetitive motion, stress, and/or horseplay, are generally not covered under the Act.

- DRM will pay for one initial visit to an emergency room as well as all treatment deemed necessary by the physician the employee selects from the University's/Hospitals' panel. The employee must select one of these panel physicians, as DRM may deny the claim if the employee seeks medical treatment from a non-panel physician.

- The employee is required to keep all medical appointments and accept the treatment recommended by the panel physician as well as by any other medical care provider to whom the employee is referred.

- In general, medical coverage is provided for a period of up to 2 years from the date of the employee's injury/illness. If the employee is disabled from work (as determined by the panel physician) for more than 7 calendar days, the employee will be eligible to receive medical benefits for as long as necessary.

- Salaried employees who are disabled from work by their selected physician (see above) will be eligible to receive workers' compensation leave for up to 92 calendar days of disability.

- Hourly employees will be paid compensation directly by DRM. Since workers' compensation does not begin until the employee is disabled for more than 7 calendar days under the Act, hourly employees will not be paid for the first 7 calendar days of disability.

## MCVP Reporting of On-the-job Injuries/Illnesses

Under of the provision of the Workers' Compensation Act (the Act), MCVP is required to provide certain benefits to employees who incur an injury/illness in the course of official work-related duties. For the purposes of being eligible for workers' compensation, an employee is defined as any person on the MCVP payroll.

To be covered, an occupational injury must arise "out of and in the course of" employment and must take place while the employee is performing work for MCVP. An occupational disease usually is one that develops over time and medical evidence must show that the disease was caused by the duties of the job and that it did not result from conditions or activities to which the employee was exposed outside of their job.

### Procedures for Filing a Workers' Compensation Claim

- Inform your supervisor of your injury/occupational disease as soon as possible after it occurs.

- If your injury is a medical emergency, you may go to Employee Health Services, the MCVH emergency room or any other emergency room. Under these circumstances you should notify your supervisor of the injury immediately after you have received treatment and then complete and file the required from as explained in the next section.

- Complete the MCVP "Report of Accident" within 24 hours of the injury/disease and submit to your supervisor, your supervisor will then complete his/her section of the form.

- Select a physician to treat your injury/disease from a panel offered by MCVP in accordance with the Virginia Workers' Compensation Act. This selection must be made even if you were treated in an emergency room. A "Physician Selection" form is available from your supervisor or the Benefits coordinator.

- As soon as your supervisor completes his/her section of the form, both the completed accident report form and the physician selection form should be hand-delivered or mailed through campus mail to the MCVP Department of Human Resources, Attn: Benefits Coordinator, Box 980232. Please do not leave either the accident form or physician selection form in the emergency room.

- Failure to notify your supervisor within 10 days of the date of your accident, or 30 days of the date of your occupational disease was diagnosed by a physician may result in the loss of workers' compensation benefits. Failure to file correct MCVP forms could also result in the loss of benefits.

## Workers' Compensation Claims Process

- After receiving both forms the Benefits Coordinator submits them to our Workers' Compensation insurance carrier.

- Once the insurance carrier receives the claim they will review it to determine if the injury/disease is compensable under the provisions of the Virginia Workers' Compensation Act. In their review they seek additional information from you, any witnesses to the accident, your supervisor, the treating physician etc.

- If the claim is accepted the Workers' Compensation Insurance carrier pays all medical and lost-time benefits associated with the claim. If the claim is denied you will be notified by the carrier and apprized of your appeal rights to the Workers' Compensation Commission. You may contact the Benefits Coordinator with questions relating to the denial of the claim. If your claim is denied all medical bills should be filed with your health insurance.

## Medical Benefits

- Under the provisions of the Virginia Workers' Compensation Act you are required to receive medical treatment for the occupational injury/disease from one of at least 3 panel physicians offered by the employer. The list of physicians offered to treat an occupational injury/disease is found on the MCVP "Panel of Workers' Compensation Physicians". If you choose your personal physician for treating a work-related injury, rather than choosing from the panel, the Workers' Compensation insurance carrier could deny any expenses associated with the treatment.

- Once you have selected a physician from the panel, you are required to keep all appointments with the selected physician and accept the treatment recommended by that physician, as well as any other physician or medical care provider to whom you are referred. If you fail to keep your medical appointments and/or follow the recommended course of treatment you may lose any compensation and/or benefits you may otherwise be entitled to under the Workers' Compensation Act.

- In case of an emergency the Workers' Compensation Insurance carrier will pay for 1 initial emergency room visit. Be sure to notify your supervisor of the treatment as soon as possible after you have received emergency treatments.

- If you remain under the care of the selected panel physician and follow the recommended treatment the Workers' Compensation insurance carrier will pay for medical bills related to the injury, unless your claim is denied. The carrier will pay for hospitalization, physical therapy, prescriptions, rehabilitation, etc. which is ordered by the treating physician. It is important for you to inform the medical care providers that you are being treated for an occupational injury/disease.

- It is recommended that you bring all related medical bills to the MCVP Department of Human Resources, Attn: Benefits Coordinator, Box 980232, FAX 342-7605. You should notify all medical care providers to bill the Workers' Compensation insurance carrier for any treatments of your occupational injury/disease. If you receive collection notices for any treatment of your occupational injury/disease notify the MCVP Benefits Coordinator immediately.

- If you become dissatisfied with the medical treatment you have received from the selected panel physician or any of the medical care providers to whom you have been referred, contact the Workers' Compensation insurance carrier and the Benefits Coordinator to discuss the matter.

- If you are disabled from work for 7 calender days or less medical benefits will only be provided under workers' compensation for 2 years from the date you were injured. If you are disabled from work for more than 7 calender days you will be eligible to receive medical benefits for as long as the carrier deems "necessary". The carrier reviews all medical bills to determine their relevance to the original injury/disease.

- If the carrier requests that you submit to an independent medical examination you are required by the workers' compensation laws to comply with that request in order to receive continuing workers' compensation benefits.

## Lost Time Benefits

- If you lose time from work (either totally or partially) as a result of an occupational injury/disease, you are entitled to compensation. Compensation under Workers' Compensation is $66^{2/3}$ percent of your average weekly wage at the time of your injury (subject to legal minimum and maximum amounts designated by the Virginia Workers' Compensation Act). Compensation does not start unless you have disabled for more than 7 calender days.

- If you miss work for those first 7 calender days due to your occupational injury/disease you must use your accrued sick, annual, or holiday leave. If you have no leave accrued you will be in a doc situation. If you continue to be on leave after the first 7 calender days workers' compensation will pay you $66^{2/3}$ percent of your average weekly wage at the time of your injury. After the first 7 days you will be paid by the Workers' Compensation insurance carrier and no longer need to use your leave balances.

- If you continue to be out for workers' compensation for over 21 days, workers' compensation will go back and pay you $66^{2/3}$ percent of your average weekly wage for the first 7 days. If this occurs and you used your leave balances to be paid for those first 7 days, MCVP will need to be reimbursed for that time and we will adjust your leave balance.

- If you have been instructed by your selected physician to either remain off duty, work reduced, hours, or work at light duty you are required to comply fully with the physician's instructions. In addition you must inform your selected physician of any significant activities at work or at home which might affect your medical status and ability to return to work such as a second job, traveling, exercise, etc. Leave authorizations will only be granted for time lost from work as indicated by your selected physician. If you fail to comply with the physician's instructions, you could lose all of your workers' compensation benefits.

## Proper Lifting Techniques

While many different kinds of injuries may occur in the work place, back injuries are the most frequent. Improper lifting technique is the most common cause. You will probably have to lift something nearly everyday. If the load is not light enough to be handled easily, use a mechanical lift, such as a hand truck, or ask someone to help you, whenever possible. If you must lift an object by yourself, follow these steps:

1. Put one foot next to the load, the other foot behind the load. Stand as close to the load as possible.
2. Bend your knees, keeping your back and head straight.
1. Use your whole hand - not your fingertips - to grasp the load. Bring the load close to your body.
4. Lift the load by straightening your knees.
5. Hold the load close to your body while carrying it, centered over your legs rather than to one side of your body.
6. Never twist or turn while lifting. Do not bend your back. Instead, use your legs to push the load upwards. In this manner, your legs and arms do the work, not your back.
7. Follow this procedure in reverse to put the load down.

The Fire And Occupational Safety section of OEHS is available to assist departments in developing and implementing Back Injury Prevention or Proper Lifting Programs, call 828-7899

## Personal Safety Precautions

While walking or driving on the campuses after hours, follow these precautions:

1. Whenever possible, walk with another person or several people.

2. If you must walk alone, stick to well-lighted, well-traveled parts of the campuses. Avoid walking near shrubbery or in dark areas or alleys.

3. Have your keys in your hands before you leave your car or your office.

4. If you are working alone after hours, keep your office door locked. Do not prop or leave doors open!

5. If you are followed while walking, cross the street and change directions. Go toward people or well-lighted areas. If you are followed by a vehicle, turn around and walk in the opposite direction, or if possible, walk down a one-way street going against the flow of traffic.

6. If you are followed while driving, do not drive directly home. Drive to a public area, hospital, or police station.

7. If you are approached in a threatening way, don't panic. Try to remain calm and think clearly. No set of guidelines will insure your safety because each situation is unique. However, obey your natural instincts and don't take chances that will result in your injury.

## Safety and Security

VCU, MCVH and MCVP are committed to providing a safe and secure environment for staff, patients and visitors. Further, we are committed to a safe environment which will be conductive to pursuing the organization's mission of excellence in Patient Care, Research and Education. The MCVH Safety and Security Office is committed to the protection of physical assets, education of staff in personal and property safety, data collection, analysis and incident reporting. In furtherance of this commitment, the MCVH Department of Safety and Security operates twenty-four hours, 365 days a year. The department manages and monitors a computerized access system, provides patient and visitor information assistance, physical security surveys, general safety training and vehicle and walking escort services to and from individuals vehicles and their work site.

The Safety and Security Department is committed to reviewing security plans from off campus Associated Physician Clinic sites where possible.

**The MCVH Safety and Security 24 hour phone number is 828-4300**

**The MCVH Safety and Security Office phone number is 828-6595 between 8 a.m & 5 p.m.**

# Hazardous Energy Control (Lockout/tagout) Program Policy

## I. PURPOSE

The purpose of the Hazardous Energy Control Program (Lockout/Tagout) is to prevent injury to employees caused by the unexpected energization, start-up, or release of stored energy. Prevention methods will consist of attaching **lockout/Tagout** mechanisms to **energy isolating devices,** to disable machines or equipment. This program meets or exceeds the requirements found in the Virginia Occupational Safety and Health Standard (VOSH) 1910.147, "The Control of Hazardous Energy (Lockout/Tagout)." A copy is available at the Office of Environmental Health and Safety. **Highlighted** words are found in the Definitions in Appendix A ,following this section. (This policy was reviewed and approved by the University Safety Liaison Committee Dec. 1991.)

## II. SCOPE

Any employee servicing or maintaining machinery or equipment, where the unexpected energizing start up or release of stored energy could occur and cause injury, is to isolate and make inoperative the machinery or equipment before servicing. **Tagout** is acceptable only if **lockout** cannot be done. Areas allowing **tagout** only are to be approved by the employee's supervisor.

When equipment/machinery is purchased, repaired, renovated, or modified, **energy isolating devices** will be installed to accept a **lockout** device. This is required by Virginia Occupational Safety and Health (VOSH).

This policy does not apply to supervised cord and plug connected equipment, or **hot taps.**

## III. RESPONSIBILITY

The Office of Environmental Health and Safety (OEHS), developed this policy and is responsible for maintaining the written hazardous energy control program. OEHS is also responsible for developing a **lockout/tagout** training program.

The Physical Plant Division, Plant Operations, Bio-med Engineering, Student Affairs, Business Services and any department with employees that may be involved in servicing equipment will be responsible for:

- identifying individuals who need training, including employees needing retaining when changes are made,
- developing specific procedures for controlling hazardous energy for each machine or piece of equipment that applies to the Control of Hazardous Energy Standard 1910.147,
- testing machines to verify the effectiveness of energy controlling measures,
- inspecting annually to ensure compliance with this **lockout/tagout** policy,
- identifying those employees to be trained as an **authorized employee** to service equipment, as defined in Appendix A.
- ensuring that new equipment, or existing equipment that is repaired, renovated, or modified is designed to accept a **lockout** device,
- providing protective materials and hardware needed to isolate, machines from **energy sources** (such as: locks, tags, chains, wedges, self-locking fasteners, adapter pins),

- enforcing this university policy through supervision, using when necessary warnings, suspension, and termination.

## IV. ENERGY CONTROL PROCEDURE

Plant Operations, Student Affairs, Business Services, and any department that has employees which may be involved in the task of servicing equipment are required to have detailed **lockout** procedure for each similar piece of machinery or equipment. The following needs to be included in each procedure:

- The name of the equipment or machinery
- The types and magnitudes of energy(s) and hazards
- Names/job titles of **authorized employees** to **lockout** or **tagout**
- Names/job titles of **affected employees** and how to notify
- Types and location of **energy isolating devices**
- Types of stored energy and methods to dissipate or restrain
- Methods selected IE: locks, tags, additional safety measures
- Specific requirements for testing equipment to see that **lockout/tagout** devices or other energy control measures are effective
- Names/job titles of employees authorized for group **lockout** or **tagout.**

The VCU Lockout/Tagout Procedure , APPENDIX B, which follows the next section Appendix A, explains the implementation of this policy.

## V. TRAINING AND COMMUNICATION

A train-the-trainer program designed for supervisors will be developed and administered by OEHS. All employees are to be trained by their supervisor before performing maintenance or service to machines and equipment. The training program includes the following:

1. Recognition of applicable hazardous **energy sources,**
2. Methods of energy isolation and control,
3. **Lockout/tagout** system procedure,
4. Removing locks and tags and restoring machines to normal operation,
5. Group **lockout/tagout,**
6. Personnel or shift changes,
7. Testing or positioning of machines,
8. Types and magnitudes of energy available at VCU.

**Authorized** and **affected employees** are to be trained when there is a change in their job assignments; or in machines, equipment or processes that present a new hazard. If there is a change in VCU's energy control procedures, the appropriate employees will be trained.

# APPENDIX A - HAZARDOUS ENERGY CONTROL (LOCKOUT/TAGOUT) - DEFINITIONS

**Affected employee.** An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under **lockout** or **tagout** or whose job requires him/her to work in an area in which such servicing or maintenance if being performed.

**Authorized employee.** A person who locks or implements a **tagout** system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment. The authorized employee has been designated to perform such duties by the employer. The authorized employee not only attaches the lock and tag but must also perform the servicing or maintenance.

**Capable of being locked out.** An **energy isolating device** will be considered to be capable of being locked out either if it is designed with a hasp or other attachment or integral part of which, or through which a lock can be attached, or it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if **lockout** can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

**Energized.** Connected to **energy source** or containing residual or stored energy.

**Energy isolating device.** A mechanical device that physically prevents the transmission or release or 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, not pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. the term does not include a push button., selector switch, and other control circuit type devices.

**Energy source.** Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

**Hot tap.** A procedure used in the repair, maintenance and service activities that involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of serve for air, gas, water, steam, and petrochemical distribution systems.

**Lockout.** The placement of a lockout device on an energy isolating device, consistent with an established procedure, ensuring that the angaria 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.

**Normal production operations.** The use of a machine or equipment to perform its intended production function.

**Servicing and/or maintenance.** Work place activities such as constructing, installing, setting up, adjusting,

inspecting, modifying and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or un-jamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or start up of the equipment or release of hazardous energy.

**Setting up.** Any work performed to prepare a machine or equipment of perform its normal production operation.

**Tagout.** The placement of a tagout device on an energy isolating device, using an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

**Tagout device.** A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device consistent with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

# APPENDIX B - HAZARDOUS ENERGY CONTROL PROCEDURE (LOCKOUT/TAGOUT)

## A. Purpose

This procedure establishes the minimum requirements for the lockout or tagout of *energy isolating devices*. It is to be used to ensure that the machines or equipment are isolated from all potentially hazardous energy, and locked out before employees perform any servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause injury.

## B. Responsibility

Plant Operations, Student Affairs, Business Services employees (including supervisors), and all other appropriate employees are to be instructed in the safety requirements of the lockout (or tagout) procedure. Each new, transferred, and other employee whose work operations are or may be in the area, are to be instructed in the purpose and use of the lockout or tagout procedure. Documents are to be current and maintained by the department/employee authorized to lockout/tagout. Each shop should conduct inspections and review the energy control procedures at least annually.

The lockout/tagout procedure also specifies the requirements for:

1. Lockout/tagout system procedure
2. Normal removal of locks/tags
3. Transfer of locks, tags, or responsibility at shift change
4. Group lockout/tagout
5. Testing or positioning of equipment

## C. Training

All employees performing maintenance or servicing on machines and equipment are required to be trained in the control of hazardous energy procedures prior to performing maintenance or servicing. Training can be arranged and scheduled through the Occupational Safety Office at 828-0040.

*Affected* employees are required to have training whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

## D. Preparation for Lockout or Tagout

A survey should be conducted to locate and identify all isolating devices to be certain which switch(es), valve(s), or other *energy isolating devices* apply to the equipment to be locked or tagged out. More than one *energy source* (electrical, mechanical, or others) may be involved.

## E. Sequence of Lockout or Tagout Procedures

1. Notify all *affected* employees that a lockout or tagout system is going to be utilized and the reason for it. This normally includes notifying the JC-85 Control Center. The *authorized* employee should know the type and magnitude of the energy that the machine utilizes, the possible hazards, and the method for controlling the energy.

2. If the machine or equipment is operating, shut it down by the normal stopping procedure.

3. Isolate the equipment from its *energy source*(s). This may be done by an operating switch, valve, or other *energy isolating devices*. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.

4. Lockout and tagout the *energy isolating devices* with tags and assigned individual locks. If the device will not accept a lockout device, additional safety measures are to be taken to control the potential for the hazardous release of energy. This may include isolating circuit elements, blocking of a controlling switch, or removing a valve handle, etc..

   Lockout or tagout devices are to be affixed to each *energy isolating device* by *authorized* employees in a manner that will hold the energy isolating devices in a "safe" or "off" position. Tagout devices are to be fastened at the same point at which the lock is attached or as close as possible to the energy isolating device.

5. Relieve all potentially hazardous stored or residual energy by disconnecting, restraining, etc. to render the equipment safe. Prior to working on machines or equipment verify that isolation or de-energization has been accomplished by operating the push button or other normal operating controls to make certain the equipment will not operate.

6. Failure to follow the set lockout/tagout procedures could result in suspension from work or dismissal, to be determined by individual department administrators.

## F. Removal of Lockout/Tagout Devices

Before lockout or tagout devices are removed and energy is restored to the machine or equipment, the following procedures are to be followed by the *authorized* employee(s).

1. After service and/or maintenance is complete and equipment is ready for *normal production operations*, check the area around the machine(s) or equipment to ensure that no one is exposed, and notify *affected* employees that lockout devices have been removed.
2. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, all lockout/tagout devices are to be removed by the employee who applied the device.
3. Operate the *energy isolating devices* to restore energy to the machine or equipment. Check for proper operation.

## G. Exception to the Above:

When the *authorized* employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the supervisor of the craft or department, provided that the following is done:

1. Verify that the *authorized* employee who applied the device is not at the facility.
2. Make all responsible efforts to notify the *authorized* employee that his/her lockout/tagout device has been removed.
3. See that the *authorized* employee has been informed before resuming work.

## H. Requirements for locks and tags

Tags are only warning devices and are to accompany locks, which provide the physical restraint on *energy isolating devices*. Tags will be accepted only if lockout cannot be accomplished. Tagout devices are to be attached at the same location that the lockout device would have been attached.

Lockout devices and tags are to be provided by the employing department. Lockout devices must be marked so that they can identify to whom they belong. These locks should only be used for controlling energy, and are never to be used for other purposes.

## Lockout/Tagout Device Guidelines

Lockout devices and tagout devices must indicate the identity of the employee applying the device.

Lockout and tagout devices are to be capable of withstanding the environment to which they are exposed, for the maximum period of time that exposure is expected.

Lockout devices need to be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

Tagout devices including their means of attachment, must be substantial enough to prevent inadvertent or accidental removal.
Tagout devices are to be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

Lockout and tagout devices are to be standardized within each division in at least one of the following criteria: color, shape, or size,(in the case of tagout devices, print and format shall be standardized).

Tagout device attachments are to be of a non-reusable type, attachable by hand, a minimum unlocking strength of no less than 50 pounds.

Tagout devices shall warn against hazardous conditions if the machine or equipment is *energized* and shall include a legend such as the following: DO NOT OPERATE, DO NOT START, DO NOT CLOSE.

## Periodic Inspection

The department responsible for the employees performing lockout/tagout is required to conduct a periodic inspection (at least annually) of the energy control procedures to ensure that the requirements of the Hazardous Energy Policy are being followed. The inspection is to be conducted by an *authorized* employee other than the employee(s) utilizing the energy control procedure being inspected.

The deficiencies or problems observed should be recorded and reported to the appropriate supervisor for correction. Each department is to keep on record a copy of these inspections, and forward a copy to OEHS.

## Shift or personnel changes

Specific procedures are to be used during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout devices between off-going and on-coming employees.

1. The off-going employee should remove his/her lockout or tagout device before the on-coming employee arrives.
2. The off-going employee should apply a tagout device after removing his/her lockout device, indicating that the lock had been removed, but that the machine or equipment had not been *energized.*
3. The on-coming employee verifies that the system is still de-energized, and removes the interim tag and substitutes his/her lockout device, insuring that continuous protection is maintained from one shift to another.

### Group lockout/tagout

When service or maintenance is performed by a crew, craft, department or other group, they are required to use a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.

1. Primary responsibility is vested in an *authorized* employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock).
2. The *authorized* employee is to have a way to ascertain the exposure of individual group members with regard to the lockout or tagout of the machine or equipment.
3. When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility should be designated to an *authorized* employee to coordinate *affected* work forces and ensure continuity of protection.
4. Each *authorized* employee is to affix a personal lockout or tagout device to the group lockout device, group lock box, or comparable mechanism when beginning work, and is to remove those devices when stopping work.
5. The equipment cannot be re-energized until all individuals in the group have removed their lock or tag.

### Testing or positioning of machines or equipment

When testing or positioning of machine during service or maintenance requires temporary removal of the lockout/tagout device, the following sequence of actions are to be followed.

1. Clear the machine or equipment of unnecessary tools and materials.
2. Remove employees from the machine area.
3. Remove lockout or tagout devices, remember to notify *affected* employees that the devices are going to be removed.
4. Energize and proceed with testing or positioning.
5. De-energize all systems and reapply energy control measures to continue with servicing or maintenance.

## Confined Space Entry Policy

VOSH requires compliance with 1910.Subpart-J of the OSHA standards for any confined space entry. VCU/MCVH/MCVP will not allow employees to enter confined spaces in violation of that standard.

**Definitions:**

**Confined space** means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
(3) Is not designed for continuous employee occupancy.

**Entry** means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

**Permit-required confined space (permit space)** means 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 that has 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; or
(4) Contains any other recognized serious safety or health hazard.

**Permit-required confined space program (permit space program)** means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

**NOTE:** VCU/MCVH/MCVP departments do not currently have such a program in place that would allow their employees to enter such spaces.)

**Permit system** means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

**Entry permit (permit)** means the written or printed document that is provided by the employer to allow and control entry into a permit space.

**Non-permit confined space** means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

**Hazardous atmosphere** means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
(2) Airborne combustible dust at a concentration that meets or exceeds its LFL; NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.
(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit; **NOTE**: An atmospheric concentration of any substance that is

not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

(5) Any other atmospheric condition that is immediately dangerous to life or health. NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

**Immediately dangerous to life or health (IDLH)** means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health

**Oxygen deficient atmosphere** means an atmosphere containing less than 19.5 percent oxygen by volume.

**Oxygen enriched atmosphere** means an atmosphere containing more than 23.5 percent oxygen by volume.

**Testing** means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

**NOTE**: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

**General requirements**.

Work areas will be evaluated to determine if any spaces are permit-required confined spaces. Known areas include Storage tanks, pits, boilers, vats, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, excavations, elevator pitslarge pipes and pipe-lines.

When identified departments shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

NOTE: A sign reading DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER or using other similar language would satisfy the requirement for a sign. Signs can be obtained from OEHS at 828-7899.

**VCU/MCVH/MCVP staff will not enter such spaces**.

**NOTE**: Departments who wish to undertake developing the intensive training, equipment purchases, and permit process permit entry must contact the OEHS Occupational Safety office at 828-7899 in order to assure the department will be able to meet all applicable OSHA standards for such entry.

Non-permit confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm may be entered provided that departments (with OEHS assistance):

Can demonstrate that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;

Can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry;

Develops monitoring and inspection data that supports the demonstrations required by paragraphs above.

If an initial entry of the permit space is necessary to obtain the data required by this section, the entry is performed in compliance with OSHA permit required confined space regulations (most likely by use of a contractor.)

The determinations and supporting data required by this section are documented by and are made available to each employee who enters the space under the terms of this section or to that employee's authorized representative.

Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.

When entrance covers are removed, the opening s all be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.

Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.

There may be no hazardous atmosphere within the space whenever any employee is inside the space.

Continuous forced air ventilation shall be used, as follows:

An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;

The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space;

The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

The atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing required by this paragraph.

If a hazardous atmosphere is detected during entry:

Each employee shall leave the space immediately

The space shall be evaluated to determine how the hazardous atmosphere developed

Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

The employer shall verify that the space is safe for entry and that the pre-entry measures required by this section have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space or to that employee's authorized representative .

When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the employer shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

When contractors perform work that involves permit space entry, the department and OEHS will:

Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the VOSH requirements.

Inform the contractor of the elements, including the hazards identified by experience with the space, that make the space in question a permit space.

Inform the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near permit spaces where contractor personnel will be working;

Coordinate entry operations with the contractor, when both host employer personnel and contractor personnel will be working in or near permit spaces.

**NOTE:** VCU and MCVP employees will not enter confined spaces with contractors unless a full confined space entry procedure for that employee’s department has been developed in conjunction with OEHS.

Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

In addition to complying with the permit space requirements that apply to all employers, each contractor who is retained to perform permit space entry operations shall:

Obtain any available information regarding permit space hazards and entry operations from the host employer;

Coordinate entry operations with the host employer, when both host employer personnel and contractor personnel will be working in or near permit spaces.

Inform the host employer of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

Any questions concerning this policy should be directed to the OEHS Occupational Safety Section 828-7899.

# Safety Audit Guidelines

OEHS Safety Inspectors routinely inspect approximately 130 campus buildings, twice a year for general and Life Safety compliance. Buildings are inspected in compliance with OSHA and JCAHO standards. Facility inspection and fire suppression/detection system testing is also conducted to comply with state and federal fire safety regulations. Corrective action is initiated as appropriate through Physical Plant Division or MCVH Plant Operations work orders, or through contract. All inspection activity is reported to the appropriate building or department managers. Summaries are reported to the University Safety Liason Committee and the Environment of Care Committee. Documentation of all activity is maintained in the OEHS Fire and Occupational Section.

These inspections do not substitute for regular departmental inspections, or audits, of the work place. Checklists for conducting departmental safety audits can be found in the **Departmental** section of this manual

# Electrical Safety Guidelines

## I. General Electrical Safety Guidelines

A. The use of electrical power cord adapters and extension cords of any kind is prohibited except where approved by Plant Operations or the MCVH/MCVP Safety Office.

B. Do not handle electrical devices with wet hands, or when standing on a wet floor. "Wet" includes all fluids such as water, body wastes, sweaty hands, pharmaceuticals, etc.

C. Electrical cords should be unplugged only by pulling on the plug itself - never by pulling on the power cord.

D. Be sure to turn electrical power switches to the OFF position BEFORE either connecting or disconnecting the plug from the power outlet.

E. Tape may not be applied to power cords except to provide additional protection from abrasion, and then only with the approval of the Physical Plant Division or Plant Operations and MCVH/MCVP Safety Office. Splices are not permitted in power cords. All cut, abraded or otherwise damaged power cords must be replaced immediately.

## II. Unsafe Devices

It is the responsibility of every staff member to take each electrically powered device which is known or suspected of being unsafe - including all devices which do not seem to work entirely as they should - out of service immediately.

A. Such devices shall be promptly labeled with a sign reading "DEFECTIVE - DO NOT USE."

B. Such devices are to be promptly reported to appropriate department for evaluation and/or repair.

C. **No toaster or toaster ovens or other devices with exposed coil elements may be used except in approved kitchens.** Break areas in general are not approved kitchens. (Questions about whether or not an area is an approved kitchen may be directed to the MCVH Safety Officer 828-6595, MCVP Safety Office at 828-0590, or OEHS Fire Safety Section at 828-7899.)

## III. Portable Space Heaters

Virginia Commonwealth University's Office of Environmental Health and Safety (OEHS) discourages the use of portable space heaters in any building. Prior to resorting to the use of a space heater:

A. Please ensure that all exterior windows, and doors are properly closed in your building/area in an effort to keep the building warmer.

B. Please contact the Site Administrator and request them to increase the building/room heat.

**If a portable space heater must be used as a temporary heat source, the following guidelines must be followed.**

**Space Heater Specifications**

C. Space heaters must be electric powered only. Fuel powered (propane, kerosene ) are not permitted. Space heaters must not take more than 110 /115 volts to operate.

D. Electric space heaters with heated coils are **not** permitted. Only oil filled (with internal heating element) and ceramic electric space heaters are permitted.

E. Space heater must be UL (Underwriters Laboratory) listed or FM (Factory Mutual) approved.

F. Space heaters must have a thermostat so that the unit will automatically shut off when a certain temperature is reached.

### Space Heater Operation

G. Space heaters must be kept at least three feet away from any combustible material and **should never be placed under desks,** tables or shelving.

H. Space heaters must always be turned off and unplugged when an area being heated is not occupied.

I. Space heaters should always be plugged directly into a wall receptacle or power strip with surge protection. Extension cords are not permitted.

J. Nothing should ever be placed on top of or touching a space heater.

K. If used, space heaters should be located in plain sight and clearly visible.

L. Maintain all paperwork (instructions, registrations, etc.) for as long as the heater is being used within the University.

**Please contact OEHS at 828-7899 or 828-0040 or the MCVH Safety Office at 828-6595 and MCVP Safety Office at 628-0590 if you have any questions or any further assistance is needed.**

## Safe Use & Storage of Flammable Materials Guidelines

**DEFINITION**: For purposes of this guideline the term FLAMMABLE refers to all liquids and gases which will burn under ordinary conditions.

### I. STORAGE

A. Flammable materials shall be stored only in rooms which are free of combustible solids, Oxygen and Nitrous Oxide cylinders.

B. When stored in cabinets with doors, the cabinets must be marked "FLAMMABLE" on the door. This applies to even small quantities of flammables.

C. Flammable liquids in quantities larger than what would normally be used in about 1 day (or in small containers) shall be stored only in approved safety cabinets, specially designed and labeled rooms, safety cans, or outside of the building.

(Safety cabinets may contain no more than 60 gallons of flammable liquids at any time.)

D. Flammable materials may be placed into refrigerators ONLY if the refrigerator is a specially designed "explosion-proof" type and is so labeled.

## II. USE

A. All rooms where flammable materials are present shall be conspicuously posted as NO SMOKING areas.

B. Where flammable liquids in large quantities must be heated, the Office of Environmental Health and Safety (OEHS) shall be consulted prior to such use. OEHS may request that certain preliminary safety precautions be taken.

## III. DISPOSAL

A. OEHS Chemical Safety Section 828-4866 shall be consulted on the disposal of all flammable and otherwise hazardous substances.

B. Open vaporization of flammable materials for disposal is prohibited.

# Holiday Decorations Guideline

## PURPOSE

To provide that all Holiday decorations present minimal fire hazard and danger to patients, visitors and staff. Adequate preparation and inspection will enable everyone to safely enjoy the presence of attractive decorations during the holiday season.

### Specific Instructions

Units wishing to decorate shall be required to follow these guidelines to provide for safety and uniformity in the selection and installation of decorations.

1. All decorations, including artificial trees, should be made of noncombustible or flame retardant materials. Decorations should be removed as soon as possible following the holiday period.

2. No live or cut trees, or greenery can be used within any building.

3. Always use "UL listed" lights and extension cords that are in good condition. Discard any electrical lights or cords with frayed, cracked, or exposed wiring.

4. Any lights used should be the "miniature" type, to keep heat levels to a minimum. Restrict lighting generally to displays in the main lobby areas.

5. No wires should extend across doorways, under doors, carpets or in walkways of any sort.

6. No decorations may obstruct exits, corridors, egress doors, smoke detectors, fire extinguishers, sprinkler heads, manual pull stations, horns, bells, or alarm lights. **(NO decoration are allowed on any cross corridor door.)**

If you have any questions, please contact the OEHS Fire & Occupational Safety Office at 828-7899.

# GENERAL SAFETY GUIDELINES FOR ALL AREAS

1. All spilled liquids must be immediately cleaned up by the person who created the spill. If circumstances prevent such immediate action, the Housekeeping Department in VCU buildings, Environmental services in MCVH Buildings, shall be promptly called to clean up the area. Do not call Housekeeping or Environmental Services to clean hazardous materials spills, follow proper procedures for such occurrence (Hazardous spill procedures are outlined in the Hazardous materials section of this manual). Under either circumstance the person who created the spill is responsible for assuring the spill is properly cleaned up.

2. Beverages may not be transported unless the container is either tightly covered or placed onto a tray.

3. Open doors slowly - there may be somebody on the other side.

4. Walk down the center of corridors, passing oncoming traffic on the right.

5. Promptly notify your supervisor of defective equipment and other safety hazards

6. All aisles, corridors and exits are to be kept clear of obstructions in order to provide clear and safe exits in case of an emergency.

7. All fires and/or smoke must be immediately reported.

8. Never prop or chock open fire doors or disable door closer devices. Do not disable automatic hold open devices installed on fire doors or in anyway allow them to be obstructed. Report such problems to OEHS Fire Safety at 828-7899 for instruction on how to correct these problems.

## SAFETY GUIDELINES FOR ADMINISTRATIVE & OFFICE AREAS

1. Do not lift or move typewriters or any other heavy piece of equipment without help. Call the Physical Plant Division to request the moving of file cabinets, desks and similar large and/or heavy items of furniture.

2. Do not stand on chairs with wheels, or on folding chairs, at any time.

3. Keep all drawers and chairs pushed in under the desks and tables so as not to create stumbling hazards.

4. All electrical power cords should be taped out of the way and not allowed to cross walkways and aisles.

5. Keep aisles clear of debris - papers, paper clips, pencils, and other slip/tripping hazards.

6. Keep stored items orderly. In a sprinkled building nothing should be permitted within 18 inches of a ceiling in order to insure proper operation of the fire sprinkler heads.

7. Notify your supervisor of all safety hazards so that they can be corrected.

8. Report all equipment which you think may be defective to your supervisor.

# Housekeeping and Environmental Services Safety Guidelines

1. Check for and report all unsafe conditions, such as:

| | |
|---|---|
| * defective equipment | * sharp edges |
| * loose floor coverings | * loose light fixtures |
| * defective carts | * damaged light switch and power outlet covers |

*Do not attempt to fix any equipment yourself, at any time. Report defective equipment to your supervisor who will arrange for repairs to be made.*

2. Safe floor cleaning and finishing procedures are important in reducing the number of slips & falls.

   a. Use a dry mop before using a wet mop.

   b. Mop only one side of a corridor at a time. Use the same procedure with floor finish.

   c. Post wet floor signs near the wet areas.

   d. Stay in the area until the entire floor is dry. Direct people to walk on the dry side.

   e. When possible, avoid leaving hoses and cords lying across halls.

   f. Do not block doorways or elevator entrances with equipment.

   g. Insure that all wet mops and equipment are removed from rooms and public areas when you are done.

3. Do not place articles on top of stepladders, cabinets, lockers or other high places.

4. Use protective gloves when cleaning with strong chemicals. These gloves will be provided by the department. If there are none where you are working, ask your supervisor about them.

5. Do not mix or use unauthorized chemicals or chemicals you are unfamiliar with. Ask your supervisor to show you how safely mix and use them. Only authorized staff may mix Matar & Hi-Tor.

6. **Cart Safety**

   a. Park carts against walls, away from fire doors, fire extinguishers and fire alarm pull stations.

   b. Always stay to the center of corridors, so as not to run into people leaving rooms. Pass oncoming traffic on the right.

   c. Pull carts through swinging doors. Do not ram them through the door.

d. Store materials in the cart in an orderly manner.

e. Approach all intersections, doorways and elevators SLOWLY so that you will not run into anyone.

7. DO NOT PICK UP BROKEN GLASS WITH YOUR HANDS. Sweep it up with a brush and dust pan. Pick up small splinters and chips with a brush and dust pan or with a wet or damp cloth (and dispose of the cloth after doing this).

8. Be sure to unplug electric cords before wiping the cord with a damp or wet cloth.

9. ALWAYS HANDLE ELECTRICAL EQUIPMENT WITH DRY HANDS.

10. ALWAYS unplug electrical cords by holding onto the plug - NEVER pull on the cord. Turn off machines before plugging them in or removing the plug from the wall.

11. DO NOT PUT YOUR HANDS INTO WASTEBASKETS TO EMPTY THEM. Remove the plastic bag by the edges. Do not swing bags against your legs as the bags may contain sharp objects.

12. Do not stand on the top step of any ladder. Make sure that the ladder's safety lock is in place and that the ladder is secure before putting your weight onto it.

13. Label all containers to indicate the contents. All unmarked containers must be promptly discarded. Unlabeled chemicals should not be used. Report all unlabeled chemicals to your supervisor for proper disposal through the OEHS Chemical Safety Section (828-4866).

14. Report slipping & tripping hazards to your supervisor promptly.

15. Keep housekeeping closets and other storage spaces clean and organized. Housekeeping closets must be locked when not in use.

16. Electrical closets and stairwell landings are not designed for housekeeping storage.

17. An unattended upright buffing machine should not be plugged in until you are ready to use it. If a buffer must be left unattended, make sure that the buffer is in a lying-down position.

18. Notify your supervisor of any wastes which may be hazardous as they may need special disposal.

19. Use proper handling procedures when removing and handling linen and trash.

## Food and Nutritional Service Safety Guidelines

1. All work areas must be kept neat and orderly.

2. Manufacturer's safety instructions on food service equipment must be maintained in the department and made available to all personnel.

3. Warn all staff of any potential hazards in the use or handling of equipment.

4. All staff must be aware of emergency procedures to take in case of an accident.

5. Staff must be informed of the proper occurrence/incident reporting procedures. All incidents must be reported in writing, by the employee and their supervisor. The supervisor is responsible for taking corrective action, where possible, to prevent a recurrence.

6. Employees must immediately report the following to their supervisor:

    * Defective equipment

    * All injuries and accidents, regardless of how slight.

    * All cuts, sores, rashes, coughs, respiratory or gastrointestinal infections.

    * All unsafe conditions they are aware of.

7. **SAFE HANDLING OF KNIVES**

    a. Always cut away from your body. Walk with knifes flat against your thigh.

    b. Store all knives in their proper location when not in use. Never leave a knife lying around.

    c. Do not put knives in a sink.

    d. Keep knives sharp - dull knives are a greater hazard.

    e. Do not use knives as can openers or screwdrivers, or for any purpose other than for cutting food.

8. **PREVENTION OF BURNS**

    a. Always use mitts, pot holders or tongs when working with hot items, or near steam.

    b. Staff should warn others when they are carrying hot liquids, and be sure that the path is clear before starting in that direction.

9. Keep doors closed at all times. Open oven doors carefully to allow heat and steam to escape safely.

10. Wipe up spills and grease spots from floors IMMEDIATELY.

11. Walk - don't run.

12. Wear safe shoes with rubber soles and heels. Open toed shoes are not to be worn.

13. Follow the proper procedures for lifting and moving materials.

14. **FOOD CART SAFETY**

    a. Push only by handle.

    b. Keep to the middle of corridors. Pass oncoming traffic on the right side.

    c. Move carts slowly. Get help if you need it.

    d. Use extra caution at corners. Use mirrors, where available, to watch for pedestrians at intersections.

    e. Do not leave carts in the center of corridors, blocking doorways, or where they can cause an obstruction.

    f. Pull carts through swinging doors. Do not push doors open with food carts.

15. Use approved stepladders or step stools to reach high items. Where possible, place heavier objects at waist height, to cut down the possibility of muscle strains or back injury.

16. Use a brush or pan to pick up broken glass or china. Dispose of the pieces in the proper container. Do not handle broken glass or china with hands.

17. Use only employer supplied can openers.

18. Keep cleaning supplies, insecticides, chemicals, etc., away from food and food preparation areas.

19. Walk-in freezers and refrigerators must be easily opened from the inside, without tools. Test the emergency release occasionally to make sure it works.

20. All staff must know how to report a fire, and what to do if the fire alarm sounds.

# Shop Safety Guidelines

## Plant Operations

### 1. Training

All staff must be qualified to perform duties to which they are assigned. Training must be documented.

### 2. HAND TOOLS

a. Use each tool correctly and for the purpose it was intended. If you don't have the right tool with you, get it - don't improvise.

b. Keep tools in good condition.

c. Put tools away when you are through with them.

d. Safety glasses must be worn by all persons using impact tools such as chisels, punches etc.

e. Do not keep edged tools loose in a common work box, or sitting on a bench.

### 3. Power Tools

a. Safety glasses are to be worn by all persons using power tools.

b. All power tools are to be either grounded or double-insulated.

c. Inspect all power tools before using them to make sure they are in good operating condition.

d. Power tools are to be used only by staff whom supervisors have authorized to use them.

e. Do not drag power cords through water, oil, or over sharp metal edges.

f. Guards on stationary power tools must be kept in place.

g. Whenever possible, suspend cords overhead if there is traffic which may run (or trip) over them. If this is not possible tape them down with duct tape to prevent tripping hazards. Assure the cord cannot be damaged by traffic however.

h. Have tools with frayed cords, broken plugs, or other damage repaired before using.

i. Clean tools only with non-flammable safety solvents.

j. Disconnect power cords whenever changing blades or otherwise working on power tools.

k. When using power tools while on a ladder or scaffold, take into consideration the weight of the equipment, job to be done, and the increased chance of injury.

l. Always shut off valves or switches when working on electrical systems. Apply warning tags and locks at lockout points such as fuse boxes and control panels.

m. Do not overload electrical circuits. Never fuse too heavily. Electrical wiring is to be done only by a qualified electrician.

## 4. Ladder Safety

a. Wood ladders are not to be painted over. Painted ladders must be discarded promptly, if found.

b. Wood ladders are to be free from large checks, shakes, decay or knots.

c. Promptly tag defective ladders for repair or destruction.

d. Never use metal ladders when working on or around electrical devices or wiring, or where they (or the person on them) may come into contact with electricity.

e. Ladders need non-slip bases.

f. Never use ladders as scaffolds.

g. Do not climb ladders with both hands filled with materials.

h. Always face the ladder.

i. Do not lean over too far.

j. Do not stand on the top 2 rungs of a ladder.

k. Rope off public areas and/or place warning signs below wherever ladders are being used.

## 5. Machinery

a. All equipment must have appropriate guards. Never remove guards that are provided.

b. All flywheels, gears and other rotating parts of machines must be guarded against contact unless they are higher than 7 feet from the floor. Guards may not have openings larger than ½ inch.

c. Table saws must be equipped with an upper blade guard, splitter and kick-back preventer.

d. Gasoline powered equipment must not be operated indoors unless adequate ventilation is provided to properly vent exhaust fumes. Gasoline will only be used in approved containers, properly marked and stored.

## 6. Painting and Spraying

a. A "No Smoking" rule must be enforced in paint and wood shops, and any other location where paints and thinners are used or stored.

b. Fire extinguishers must be available wherever flammable paints or thinners are used or stored. Flammables must only be kept in approved containers properly labeled and stored. A properly labeled container includes the product name and the hazard warnings applicable to the product.

c. When spray-painting, a respirator and gloves shall be worn. Respiratory protection will be selected and approved by OEHS.

d. Gasoline powered air compressors should not be used indoors.

## 7. Electrical Safety (See the Lockout/Tagout Policy section of this manual )

a. Before machinery is worked on the electrical controls must be shut off, tagged and locked. Tags and one-key locks should be removed only by the person who originated their use.

b. Electricians should not repair, service, or perform any operations on energized electrical lines or equipment, except as follows:

1. Where cutting of power would present an immediate hazard to life.

2. If voltage adjacent to equipment being worked on exceeds **250 volts**, two or more electricians must be present.

c. All electrically operated equipment must be provided with a grounding cord and cap.

d. Panel board circuit identification directories must be kept current.

e. Panel boxes must have all unused openings (knock-outs) sealed. Blank-ups need to be installed in all breaker panels where circuits are exposed, due to unfilled breaker slots.

# Interim Life Safety Measures

(Copy of ILSM Form and Policy)

**Interim Life Safety Measures** (ILSM) are a series of administrative actions that must be taken to compensate temporarily for the hazards posed by existing construction activities or Life Safety Code deficiencies. ILSM must be implemented in or adjacent to, all construction areas and throughout buildings with existing Life Safety Code deficiencies. ILSM apply to all personnel, including construction workers, and must be implemented during project development and continuously enforced through project completion.

**Interim Life Safety Measures** are to be reviewed weekly and documented by the project manager. Any changes are to be noted. All project managers must keep records of this documentation available for review.

**Project Name:**_____

**Project Location:**_____

**Start Date:**_____

**Completion Date:**_____

***When the project is completed, a copy of the weekly documentation record must be given to:***

1) VCU Fire and Occupational Safety Office, attention Fire Safety Engineer, PO Box 980142, Richmond, Virginia, 23298-0142, (McGuire Hall, 1112 East Clay Street, room B-12) telephone number 804-828-7899, fax number 804-828-1773.

2) MCVH Safety Office, attention MCVH Safety Officer PO Box 980320, Richmond, Virginia, 23298, (AD Williams Clinic, 1202 East Marshall Street, room B-503) telephone number 804-828-4303, fax number 828-4299.

3) MCVP Safety Office, P.O.Box 980510, Richmond VA, 23298, Phone 828-0590, Fax 828-7070.

**QUESTIONS:**
I) Do Life Safety deficiencies or construction/renovation activities pose a Life Safety hazard as defined by NFPA 101, 1997 Life Safety Code (LSC)? **YES**_____ **NO**_____

II) If Yes, list possible hazard, beginning date of hazard, and projected ending date::
a._____
b._____
c._____
d._____

III) **Interim Life Safety Measures** consist of the following actions:
a) Ensuring free and unobstructed exits. Personnel receive additional training when alternative exits are designated. Buildings or areas under construction must maintain escape routes for construction workers at all times. Means of exiting construction areas are inspected daily. **ACTION TAKEN:**

_____
_____
_____
_____

b) Ensuring free and unobstructed access to emergency services and for fire, police and other emergency forces. **ACTION TAKEN:**

_____
_____
_____
_____

c) Ensuring fire alarm, detection, and suppression systems are in good working order. A temporary but equivalent system shall be provided when any fire system is impaired. Temporary systems must be inspected and tested monthly, and inspection reports maintained, by VCU Fire and Occupational Safety. **ACTION TAKEN:**

_____
_____
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_____

d) Ensuring temporary construction partitions are smoke tight and built of noncombustible or limited combustible materials that will not contribute to the development or spread of fire. **ACTION TAKEN:**

_____
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_____

e) Prohibiting smoking throughout the organization's buildings, and in and adjacent to construction areas. **ACTION TAKEN:**

_____
_____
_____
_____

f) Developing and enforcing storage, housekeeping, and debris removal practices that reduce the buildings flammable and combustible fire load to the lowest feasible level. **ACTION TAKEN:**

_____
_____
_____
_____

IV. VCU Fire and Occupational Safety

a) Where necessary, provide additional fire-fighting equipment and training personnel in its use. **ACTION TAKEN:**

_____
_____
_____
_____

b) Conduct a minimum of two fire drills per shift per quarter. **ACTION TAKEN:**

_____
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_____
_____

c) Are the units or departments in or near the effected area prevented from evacuating per previously established procedures? **ACTION TAKEN:**

_____
_____
_____
_____

d) Increasing hazard surveillance of buildings, grounds, and equipment, with special attention to excavations, construction areas, construction storage, and field offices. **ACTION TAKEN:**

_____
_____
_____
_____

e) Conducting organization wide safety education programs to promote awareness in Life Safety Code deficiencies, construction hazards, and Interim Life Safety Measures.
**ACTION TAKEN:**

_____
_____
_____
_____

Signatures Date -Telephone#

---

PROJECT MANAGER_____

MCVH SAFETY OFFICER or MCVP SAFETY MGR._____

VCU FIRE AND OCCUPATIONAL SAFETY_____

# Interim Life Safety Measure Items Review List

For each item, is this existing equipment, system or construction effected by new renovation or construction?

_____1) Alarm indicating appliances, including horns, strobes, bells, and speakers.

_____2) Fire or smoke walls, floors, ceilings, and doors.

_____3) Smoke or heat detectors, including duct detectors.

_____4) Manual fire alarm pull stations.

_____5) Fire and/or smoke dampers.

_____6) Exit egress corridors.

_____7) Fire exits and stairways.

_____8) Exit signs.

_____9) Emergency lighting, including lights on emergency power circuits.

_____10) Sprinkler systems, including sprinkler heads and control valves.

_____11) Standpipes, standpipe cabinets and valves, and fire department connections outside of the building.

_____12) Fire extinguishers and cabinets.

_____13) Fire and smoke doors.

_____14) Automatic door closure or hold open devices.

_____15) Fire fighter's communication stations and panels.

_____16) Area of rescue assistance stations and panels.

_____17) Oxygen systems, medical gas systems, and control valves.

_____18) Storage of materials in inappropriate locations, including non-fire rated rooms.

_____19) Hotworks, including cutting, welding, soldering, and roofing.

_____20) Kitchen hood exhaust removal and kitchen hood fire suppression systems.

_____21) Electrical panels, including all fire systems panels, communication speakers, and safety related panels.

_____22) Emergency eye wash stations and showers.

# Transportation Safety Guidelines

All employees who drive MCVH/MCVP vehicles need to show their valid driver's license to their supervisor to be copied for the employees's employment file. This must be done before the vehicle is driven and preferably before the employee is hired, and should be reverified annually. If an employee will drive any vehicle as a primary job duty, list a valid driver's license in the requirements for recruitment, with a request for a current DMV record .

Safety belts are to be used at all times, as required by state law and. If a vehicle is ticketed or towed the department needs to have a policy as to who is responsible for paying the costs. A vehicle sign out log is useful when more than one driver uses the vehicle.

# Accidents Involving MCVH Vehicles

All MCVH vehicles should have packets in the glove box with detailed instructions to follow if the vehicle is involved in an accident. Any accident involving MCVH vehicles must be reported as soon as possible to the Fleet Safety Office by calling 828-9418.

# Accidents Involving MCVP Vehicles

Any accident involving MCVP vehicles must be reported as soon as possible to the MCVP Legal Services Office by calling 359-8744.

# Fire and Occupational Safety Training

The Fire and Occupational Safety Section of the Office of Environmental Health and Safety has developed training classes in these areas. Below are listed the courses, manuals and targeted staff.

| **Training Courses *** | **Target Audience** |
|---|---|
| Safety Awareness | All non-healthcare, paid workers |
| Essential Education Blitz | Existing Healthcare Workers |
| Nursing Inservice | New Healthcare Workers |
| Evacuation Training | Specific for area and building |
| Emergency Fire Response Team | Members of Fire Response Teams |
| Hands-on-Fire Extinguisher Training | Specific for area, as requested |
| Dr. Red Drill Training | Per schedule and special requests |
| Resident Assistant/Security Training | Housing Student Employees |
| Biology Graduate Assistants | Graduate Students |
| VCU Police Academy | VCU Police Officers |
| Lockout/Tagout | Maintenance Employees |
| Confined Space | Maintenance Employees |

*(Course Numbers are subject to revision. Contact the OEHS Training Coordinator at 828-0040 for updated course numbers.)

| **Training Manual** | **Target Audience** |
|---|---|
| Fire Response Team Manual | Plant Operations, PPD, Telepage, All Other Fire Response Team Members, OEHS |
| Safety Awareness Handbook | All new employees |
| Interim Life Safety Program | Outside Contractors, MCVH Plant Operations, PPD |
| Hot Works Permit Program | Maintenance and Contract Workers |

Questions and requests for written materials should be directed to the Fire and Occupational Safety Section of OEHS at **828-7899**.

# RADIOACTIVE MATERIALS

## RADIATION SAFETY TRAINING

The Radiation Safety section of Environmental Health & Safety provides radiation safety training for radiation workers at VCU/MCVH/MCVP and maintains documentation of this training. Following is a list of radiation safety training programs and manuals.

| Training Course | Target Audience |
|---|---|
| Safety Awareness Program | Orientation for new employees |
| Radiation Safety Lecture | Radiation workers and refresher training |
| Radiation Safety Short Course | 1 credit, 15 hour course |
| Radiation Safety Inservice Training | Specific for area, as requested |

| Training Manual | Target Audience |
|---|---|
| Safety Awareness Employee Handbook | Orientation for new employees |
| Radiation Safety Manual for Nuclear Medicine | Radiation workers in Nuclear Medicine Radiation Safety |
| Radiation Safety Manual for Radiation Oncology | Radiation workers in Radiation Oncology Radiation |
| Radiation Safety Manual for Nurses | Nurses who work with brachytherapy patients |
| Radiation Safety Manual for Radiology | Radiation workers in Radiology |
| Radiation Safety Guide | Radiation workers in laboratories |
| Radiation Safety Manual for Dental Radiography | Radiation Workers in Dentistry |
| Radiation Safety for Animal Facility | Radiation Workers in the Animal Facility |

Questions and requests for information about the radiation safety training programs and manuals should be directed to the Radiation Safety Section of OEHS at 828-9131.

# RADIATION SAFETY PROGRAM

## Radiation Workers

Some employees are likely to be exposed to radiation in the course of their normal job duties. Radiation and radioactivity are used in several areas of VCU/MCVH/MCVP, including the departments of Nuclear Medicine, Diagnostic Radiology (X-Ray), Radiation Oncology, Clinical Pathology, and in many of the university's research laboratories. Some employees who work in these areas are classified as radiation workers and subject to radiation protection controls.

## Radiation and Risk

Exposure to high levels of radiation have been associated with cancer, birth defects, and health problems. At the dose levels permitted for employees at VCU there are no known health effects, but it is sensible to keep radiation exposure as low as possible. In general, the risks associated with occupational exposure are smaller than the risks associated with most day-to-day activities.

## Natural Radiation

Natural radiation is everywhere. We are exposed to a constant stream of radiation from outer space. Radioactivity is in the ground, the air, the buildings we live in, the food we eat, the water we drink, and the products we use.

## Radiation Exposure

Radiation exposure is measured in Sieverts or rems. An individual in the United States averages approximately 2.6 milliSieverts (or 260 millirem) of exposure each year from natural sources. In addition, many of us will average another 1 milliSievert (or 100 millirem) per year from medical procedures.

## Sources of Radiation at VCU/MCVH/MCVP

Sources of radiation exposure at include laboratories which perform research using radioactive materials, patients undergoing medical procedures using radioactive medicines or sources, and radiation producing devices such as X-ray machines. Radiation exposure can occur by contamination of skin or clothing, eating and breathing radioactive materials, exposure to radiation from patients, and from activated x-ray or therapy machines. Patients can also be a significant source of radiation when they have undergone treatment using radioactive medicines or sources. The chart and door to the patient's room are labeled during such therapies. Patients who are given very small amounts of radioactive medicine do not pose significant radiation hazards and their rooms are not labeled.

## ALARA

VCU is committed to keeping radiation exposures as low as reasonably achievable (ALARA). Coordinated by the University's Radiation Safety Committee, the ALARA program sees that every activity involving radiation is planned to minimize exposure for employees, students, patients, and visitors.

## Radiation Safety at VCU/MCVH/MCVP

The use of radiation and radioactivity is governed by the Nuclear Regulatory Commission and the State Health Department. The Radiation Safety staff directs and coordinates the university's radiation safety program and is responsible for its day-to-day operation, including 24 hour radiation emergency response. The Radiation Safety Committee, which is appointed to review the radiation safety program, is committed by written policy to keep radiation doses for employees, students, patients and visitors as low as reasonably achievable. The Radiation Safety staff is responsible for ensuring that all radiation safety regulations set forth by the Nuclear Regulatory Commission (NRC), the Commonwealth of Virginia, and VCU are observed.

Copies of NRC and State licenses, results of NRC and State inspections, and Parts 19 and 20 of 10 CFR, which are the NRC regulations concerning "Notices, Instructions and Reports to Workers; and Inspections" and "Standards for Protection Against Radiation" are available from the Radiation Safety Office.

Instruction in safety measures which individuals should use to minimize their radiation exposure have been developed for all applicable areas. In some cases specific procedures must be followed. Your supervisor should advise you of the precautions to be taken and identify all applicable procedures.

# Procedure For Obtaining Approval For Use of Radioactive Materials or Radiation Producing Devices in Humans

In accordance with VCU, State and Federal regulations, all applications involving the use of radioactive material in humans must be approved by the Radiation Safety Committee (RSC) before final approval can be given by the Committee on the Conduct of Human Research (CCHR). Applications involving the use of radiation producing devices (X-rays) on humans in a manner that does not directly benefit the individual*, must also be approved by the RSC before final approval can be given by the CCHR. The applicant must include the following information in the body of the protocol:

1. The dose equivalent to the gonads, breast, red bone marrow, lung, thyroid and bone surfaces.
2. The dose equivalent to any other organs that are exposed to more than 6% of the effective dose equivalent.
3. The whole body effective dose equivalent (EDE)**.

**In the consent form, radiation doses that fall into the ranges specified in the following table must be characterized by the appropriate risk statement (see table).**

| Dose | Risk Statement |
|---|---|
| EDE $\leq$ 50 mrem | essentially without risk |
| EDE > 50 mrem and $\leq$ 500 mrem and $\leq$ 500 mrem to any organ not considered in the EDE. | minimal risk |
| EDE > 500 mrem and $\leq$ 5,000 mrem and $\leq$ 3,000 mrem to the whole body, active blood-forming organs, lens of the eye or gonads from a single study, and $\leq$ 5,000 mrem annually, and $\leq$5,000 mrem to other organs from a single study and 15,000 mrem annually. | slight risk |

Applicants should contact Radiation Safety at 828-9131 and make an appointment with the Radiation Safety Officer or his delegate to discuss their research proposal. All protocols involving the use of radiation must be reviewed by the RSO prior to CCHR submission. Any amendments of conditions or protocols approved by the CCHR which affect radiation dose must also be submitted to the Radiation Safety Committee for re-approval.

* *If all the radiation components of a protocol being submitted have been previously approved by the Radiation Safety Committee, and these component procedures are for the direct benefit of the individual, no further Radiation Safety Committee approval is necessary. For instance, approved diagnostic Nuclear medicine procedures that are included in a proposal, and would have normally been used to diagnose or treat the individual's condition, do not require Radiation Safety Committee approval.*

*If a protocol involves procedures utilizing radiation, and those procedures have not been approved by the Radiation Safety Committee, or the procedures have been approved by the Radiation Safety Committee but are not being performed for the direct medical benefit of the individual, Radiation Safety Committee approval is required. For example, a protocol includes an approved lung scanning procedure, the results of which will be correlated with routine chest x-rays. If the lung scan would not normally be done and is being performed for reasons other than the individual's direct medical benefit, this protocol now requires Radiation Safety Committee approval.*

** As defined in ICRP Publication 26 "Recommendation of the International Commission on Radiological Protection", Pergamon Press, Volume 1 No. 3, 1977.

## Rationale and Guidelines For Development of Radiation Risk Statement To Be IncludedIn Consent Forms For Research Involving Human Subjects

### Radiation Safety/Radioactive Drug Research Committee
### Virginia Commonwealth University

This document has been created by the Radiation Safety Committee (RSC) in response to a request from the Committee on the Conduct of Human Research (CCHR) to present the scientific and philosophic justifications for the radiation risk statements included in human use consent forms. In granting approval to proceed with a study, the RSC assumes that the Responsible Investigator supports this philosophy and conveys its intent in discussing issues of risk raised by research subjects.

The RSC's present position on radiation risk is based on the National Research Council's Committee on the Biological Effects of Ionizing Radiation Report, Health Effects and Exposure to Low Levels of ionizing Radiation, otherwise referred to as BEIR V (December 1989) and national council on Radiation Protection and Measurements Report No. 91, Recommendation On Limits For Exposure To Ionizing Radiation (June 1, 1987.)

Radiation effects are divided into three major categories: heritable effects, carcinogenic effects and mental retardation. Low level radiation risks are generally extrapolated from effects observed at doses that are higher than 10 rad. The 10 rad dose level is usually looked upon as the dividing line between low level and high level doses. Most of the observations of low-LET radiation effects are restricted largely to high dose rates. The carcinogenic effect of low-LET radiation is generally reduced at low doses or dose rate.

The average annual exposure to individuals living in the United States may be used for comparison purposes. Background radiation levels from cosmic, terrestrial, and internal sources average 95 millirem a year. The effect dose associated with radon exposure in the home averages 200 millirem a year. Taken together with the average x-ray and nuclear medicine exposure to the general public, the average annual population exposure in the United States is now estimated to be 360 millirem a year.

Heritable Effects. By extrapolation from to man, it is estimated that at least 100 rad of low dose rate, low LET radiation is required to double the mutation rate in man. Heritable effects of radiation have not yet been demonstrated in man. The risk coefficient to the first generation is $1 \times 10^{-6}$ dominant disorders per rad. In general the heritable risks is an order of magnitude less than that associated with radiation carcinogenesis.

Carcinogenic Risk. The excessive lifetime risk associated with an acute exposure of 10 rad of low LET radiation is 0.8% according to the BEIR V report. The accumulation of the same dose over weeks or months is expected to reduce the risk by a factor of 2 or more. The upper limit for this dose reduction effect factor (DREF) may be as great as 10. An acute dose of 10 rad to the entire U.S. population would result in about a 4% increase in the current baseline cancer risk assuming no dose reduction effect factor. If the upper limit of the DREF is assumed, this results in only a 0.4% increase.

Mental Retardation. The frequency of severe mental retardation associated with in utero exposure is highest in the 8th to 15th week of gestation. The risk is approximately 0.4% per rad. Diminution of IQ at a rate of 0.3 points per rad has also been noted. This again has its highest probability in the 8th to 15th week of gestation. Other fetal effects may include a cancer risk which is estimated to be 2 to $2.5 \times 10^{4}$ per rad in the first ten years of life. Other epidemiology studies suggest an association between utero exposure and carcinogenic risks in adult life.

The BEIR V report conclusions on radiation risk include two very specific statement which should be strongly considered when evaluating the risk/benefit of low level radiation.

- "studies of population chronically exposed to low level radiation, such as those residing in regions of elevated natural background radiation, have not shown consistent or conclusive evidence of any associated risk in the increase of cancer."
- "epidemiological data cannot rigorously exclude the existence of a threshold and that at low dose and low dose rates the lower limits of the range of uncertainty in the risk estimate extends to zero.

The heritable, carcinogenic, and mental retardation risks associated with low dose, low LET radiation are risks which are based on theoretical models rather than actual epidemiological data. At this point in time it is unclear as to whether or not we will ever be able to demonstrate whether or not a risk exists at these levels of radiation.

The doses associated with most research protocols reviewed by the RSC are generally very low, often comparable to the average annual exposure received by the general population (360 mrem/yr). The risks associated with these levels is very small especially when compared with the spontaneous occurrence of cancer and genetic effects in the population or the risk associated with the activities of everyday life.

Based on these factors the RSC has adopted the following dose guidelines when considering the risks associated with both research and clinical uses of radiation. The justifications are based on information found in the references previously referred to as well as FDA and NRC regulations. The statements have been developed to conform with the general philosophy of the CCHR regarding consent:

(1) inform subjects that they will receive some (or additional) radiation exposure as a participant in the study and to indicate the level of risk,
(2) avoid the inclusion of emotional terms like cancer, death, etc., so as not to alarm the subject and,
(3) avoid comparison to risks associated with other radiological procedures which are not familiar to the subject.

| Dose | Justification |
|---|---|
| EDE $\leq$ 50 mrem | Background radiation levels vary in the range of 60-70 mrem/yr in North America and apparently play no role in an individual's decision as to where to live or work.[1] Based upon this fact the committee feels that the risk associated with doses in this range may be described as essentially without risk implying that the risk should not be considered as an essential factor in any individuals decision to participate in the study. |
| EDE > 50 and $\leq$ 500 mrem and $\leq$ 500 mrem to any organ not considered in the EDE | Both the NCRP[2] and NRC[3] recommended this level as a limit for infrequent annual exposure to the general public. This level is viewed as reasonable in comparison to risks associated with other common activities of everyday life and need not be regarded as especially hazardous. Based upon this fact the committee feels that doses in this range may be described as having minimal risk implying that it is small in amount or degree and should be of minor concern to a subject when considering whether or not to participate in the study. |
| EDE > 500 and $\leq$ 5,000 mrem and $\leq$ 3,000mrem to the whole body, active blood-forming organs, lens of the eye and gonads from a single study, and $\leq$ 5,000 mrem annually, and $\leq$ 5,000 mrem to other organs from a single study and 15,000 mrem annually. | Both the NCRP and NRC recommend this level as a limit for occupational exposure. These limits are also specified by the FDA for use by the RDRC[4]. These limits are characterized as having little biological significance for the individual since the life-time risk will be only slightly increased. The risk is also viewed as comparable to that of working in a safe industry for one year. Based upon this fact the committee feels that doses in this range may be described as having slight risk implying that the risk is of small importance or concern to a subject when considering whether or not to participate in the study. |

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1 Nuclear Regulatory Commission Policy Statement, *Below Regulatory Concern, July 3, 1990.*

2 NCRP Report No. 91, *Recommendation On Limits for Exposure To Ionizing Radiation,* Bethesda, MD, June 1, 1987

3 10 CFR 20 *Standards for Protection Against Radiation,* Federal Register, Vol 56., No 98, May 21, 1991.

4 21 CFR 361, *Prescribed Drugs for Humans Use Generally Recognized as Safe and Effective and Not Misbranded: Drugs Used in Research,* Federal Register, April 1, 1990.

# An Overview of the Effects of Low Level Radiation on Humans

VA Commonwealth University

The RSC present position on radiation risk is based on the National Research Council's Committee on the Biological Effects of Ionizing Radiation Report, Health Effects and Exposure to Low Levels of Ionizing Radiation otherwise referred to as BEIR V (December 1989) and National Council on Radiation Protection and Measurements Report No. 91, Recommendation On limits For Exposure To ionizing Radiation (June 1, 1987).

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The average annual exposure to individuals living in the United States may be used for comparison purposes. Background radiation levels from cosmic, terrestrial, and internal sources average 95 millirem a year. The effective dose associated with radon exposure in the home averages 200 millirem a year. Taken together with the average x-ray and nuclear medicine exposure to the general public, the average annual population exposure in the United states is now estimated to 360 millirem a year.

Heritable Effects. By extrapolation from mouse to man, it is estimated that at least 100 rad of low dose rate, low LET radiation is required to double the mutation rate in man. Heritable effects of radiation have not yet been demonstrated in man. The risk coefficient to the first generation is $1 \times 10^{-6}$ dominant disorder per rad. In general the heritable risks is an order of magnitude less than that associated with a radiation carcinogenesis.

Carcinogenic Risk. The excessive lifetime risk associated with an acute exposure of 10 rad of low LET radiation is 0.8% according to the BEIR V report. The accumulation of the same dose over weeks or months is expected to reduce the risk by a factor of 2 or more. The upper limit for this dose reduction effect factor may be as great as 10. An acute does of 10 rad to the entire U.S. population would result in about a 4% increase in the current baseline cancer risk assuming no dose reduction effect factor. If the upper limit of the DREF is assumed, results in only a .4% increase.

Mental Retardation. The frequency of severe mental retardation associated with in utero exposure is highest in the 8th to 15th week of gestation. The risk is approximately 0.4% per rad. Diminution of IQ at a rate of 0.3 points per rad has also been noted. This again has its highest probability in the 8th to 15th week of gestation. Other fetal effects may include a cancer risk which is estimated to be $2 \text{ to } 2.5 \times 10^{4}$ per rad in the first ten years of life. Other epidemiology studies suggest an association between utero exposure and carcinogenic risks in adult life.

BEIR V risks conclusion include two very specific statements which should be strongly considered when evaluating the risk/benefit of low level radiation.

- "studies of populations chronically exposed to low level radiation, such as those residing in regions of elevated natural background radiation, have not shown consistent or conclusive evidence of any associated risk in the increase of cancer.

- epidemiological data cannot rigorously exclude the existence of a threshold and that at low dose and dose rates the lower limits of the range of uncertainty in the risk estimate extends to zero.

The heritable, carcinogenic, and mental retardation risks associated with low dose, low LET radiation are risks which are based on theoretical models rather than actual epidemiological data. At this point and time it is unclear as to whether or not we will ever really be able to demonstrate whether or not a risk exists as these levels of radiation can be clearly defined.

## Radiation Emergency Plan

The Radiation Emergency Plan is distributed to the departments and offices which are involved in planning or participating in radiation emergency drills and actual incidents. The locations listed below should have copies of the plan.

MCVH Administration
MCVH/MCVP Risk Manager
MCVP Safety Manager
Office of Marketing and Public Affairs
Emergency Department
Nuclear Medicine Division
Telepage (Notification pages)
VCU Campus Police
Central Services
Hospital Transportation Department
Pharmacy Services
Radiation Safety Section of the Office of Environmental Health & Safety (OEHS)
Chemical Safety Section of OEHS
MCVH Safety & Security

Questions and requests for information about the Radiation Emergency Plan should be directed to the Radiation Safety Section of OEHS at 828-9131.

# DEPARTMENTAL SAFETY PROGRAM

This section is provided for your department, school, or unit's safety policies and procedures. No one safety manual can cover all the needs for a diverse university/hospital environment. Some departments within the university and hospital, like Pathology, have developed their own departmental safety manual. For those departments, just a note in this section referring the staff to the safety policies and procedures will meet this section's requirements.
If you have not developed your own departmental safety policies and procedures, a committee should be appointed to address the individual safety needs of your area.

The Office of Environmental Health and Safety is available as a resource by calling 828-7899.

## Safety Surveys

The Environment of Care Committee (EOCC) is required to perform a number of functions in order to comply with safety requirements under JCAHO. Some of these functions require departmental cooperation and response.

## Operational and Facility Survey

The EOCC is required to assure, by monitoring and review, that each department within MCVH and MCVP is regularly surveyed for compliance with all VCU/MCVH/MCVP Safety Policies and Procedures. The results or summaries of such surveys need to be submitted to the EOCC annually in a written report. A copy of the completed survey should remain in the department's copy of this manual.

The surveys require physical inspection and observation of both facilities and operations, documentation of staff training, and query and evaluation of staff knowledge of safety policies and procedures.

Each report should include departmental corrective actions (and the positions responsible for any such action) for each areas identified by the survey as being sub-standard.

## Policy and Procedure Review

In addition, each department will need to review departmental maintenance of and access to all applicable safety policies and procedures, within the department. This annual review requires each department to submit to the MCVH Safety Office a statement, signed by the department head, that all relevant safety policies and procedures are in place and available to staff. A copy of the signed statement should remain in the department's copy of this manual.

## Survey and Review Procedures and Documentation

Survey and review procedures may require different approaches by different departments. Departments of varying size, and operations may require more or less sophisticated survey instruments than those provided in this manual. Some departments may need to perform surveys much more frequently than annually to assure compliance. The following documents are meant to be instructive, but may be altered to meet the needs of individual departments.

**Department Survey**: Surveys of satellite facilities must be submitted at least annually to the MCVP Safety Manager. A copy of the completed survey should remain in the department's copy of this manual.

Department Name: _____Dept. Code_____

Location:_____

Department Head: Name_____ Signature:_____

Date of Survey: _____

Surveyor(s): Name(s) _____ Signature(s):_____

_____ _____

_____ _____

_____ _____

## Staff Training

Number of staff:_____

Number with current New Employee Safety Awareness or Essential Education Blitz Documentation.
All employees require annual updates.

Health Care Providers: Current :_____ Out of Date:_____

Non-Health Care Providers: Current :_____ Out of Date:_____

Annual Performance Evaluations:
Are staff evaluated for safety training compliance during annual performance reviews? Yes _____ No _____

Do all staff know the location of and have access to the VCU/MCVH/MCVP and departmental Safety Manuals and Employee Safety Awareness Handbooks? Yes _____No _____

Emergency Preparedness and Infection Control Yes _____ No_____
**Corrective Action Required:**

## Workers Right To Know Statements

All employees must have a completed Workers Right To Know Statement on File. (Right To Know Statements should be up-dated to coincide with any change in an employees position or duties that result in new hazardous conditions or exposures.)

Staff with Statements on File: #_____

Staff without Statements on File: #_____

**Corrective Action Required**:

## Hazardous Communication

All employees have been instructed as to the location and use of Material Safety Data Sheets (MSDS)

Number of staff with documentation of such instruction: _____ Without:_____

Departmental MSDS are located where? _____

Departmental chemical inventory is up to date. Yes _____ No _____
(Copy attached)

Departmental chemical inventory is available to staff. Yes _____ No _____

All chemicals in work area are properly labeled. Yes _____ No (#) _____
(If no, record the number of containers not labeled)

Staff can identify hazardous materials in their work areas Yes (#) _____ No (#) _____
(Record the number of staff surveyed as yes or no)

Staff can identify emergency chemical use and spill procedures. Yes (#) _____ No (#) _____
(Record the number of staff surveyed as yes or no)

**Corrective Action Required:**

## Emergency Procedures

Employees have been issued R.A.C.E.R. procedure Cards. Yes (#) ___ No (#) ____N/A___
(Record the number of staff surveyed as yes or no)

Employees can identify:

Nearest Exits (at least 2 different exits) Yes (#) ____ No (#) ____
(Record the number of staff surveyed as yes or no)

Fire alarm pull station locations in their work areas. Yes (#) ____ No (#) _____
(Record the number of staff surveyed as yes or no)

Clinical staff can identify patient relocation areas. Yes (#) ____ No (#) ____
(Record the number of staff surveyed as yes or no)

Clinical staff can identify Oxygen cutoff locations and procedure. Yes (#) ____ No (#) ____
(Record the number of staff surveyed as yes or no)

All Dr. Red drills on unit have been rated satisfactory Yes _____ No _____
(If no attach dates and details of substandard drills)

Clinical staff can identify procedures to be followed in an external disaster. Yes (#) _____ No (#) _____
(Record the number of staff surveyed as yes or no)

Clinical staff can identify procedures to be followed in an internal disaster. Yes (#) _____ No (#) _____
(Record the number of staff surveyed as yes or no)

**Corrective Action Required:**

## Departmental Safety Audits

Are regular inspections of the work areas conducted? Yes_____ No_____ Frequency_____

If yes, who conducts these inspections _____

To whom are deficiencies reported _____

Who is responsible for follow-up to assure corrective action is taken _____

Are staff injury reports reviewed to assure accident prevention steps have been implemented to prevent similar injuries. Yes (# past 12 months)_____ No _____

Are patient occurrence reports reviewed to assure accident prevention steps have been implemented to prevent similar occurrences. Yes (# past 12 months)_____ No _____

Is the VCU/MCVH/MCVP Safety Manual, Safety Audit Checklist used: (Attach completed copies of all forms used.)

Are any custom departmental audit forms used? Yes_____ No _____ N/A _____

Audit reports kept on file for at least 2 years? Yes _____
Location of Files_____
No _____

**Corrective Action Required:**

## Radiation Safety

This unit has how many radiation workers? (#) _____

Can radiation workers identify
radiation safety procedures? Yes (#) _____ N/A_____
(Record the number of staff surveyed as yes or no)

**Corrective Action Required:**

**Departmental Policies and Procedures**

Are there departmental safety policies and procedures
in place, in addition to the VCU/MCVH/MCVP Safety Manual? Yes (#) _____ No _____

If yes, are they attached to or referenced in the
the "Departmental Safety Section" of your department's
copy of the VCU/MCVH/AP Safety Manual. Yes (#) _____ No _____

Please list any such policies:

**Policy and Procedure Review:** Must be submitted annually to the Environment of Care Committee and a copy maintained in the departmental copy of the VCU/MCVH/MCVP Safety Manual.

Department Name: _____

Location: _____

This department has reviewed the VCU,/MCVH/MCVP Safety Manual, all applicable MCVH and MCVP Departmental Safety Policies and Procedures. These policies and procedures are located within the department, and have been made known and available to staff. In addition supervisory staff have been made aware of their responsibilities to apply and enforce such policies.

Department Head: _____

Signature : _____ Date: _____

## Departmental Audits

Periodic safety audits (surveys) for hazard recognition is in the best interest of the university population. The Office of Environmental Health and Safety conducts periodic inspections but recommends that each department's management program consist of a self audit that includes safety. The following "Safety Audit Checklist" on the next page can be used as a starting point to develop a survey form more tailored to your area. If your department has several locations, you may want to use this "Self-Survey Request Memo."

### Sample Self-survey Request Memo

TO: DATE:

FROM: RE: Safety Surveys

As part of the department's ongoing safety program. I would like to request that you perform a safety survey of your area.

1. Enclosed you will find a set of safety questionnaires. Please assign each to a different member of your department.

2. Sometime before_____, please ask your staff about safety matters they feel should be corrected. If you conduct department meetings, this would be a good place to do this.

    a. Find out about matters such as slippery spots on the floors, what they're bumping head or hands on, sharp corners, etc.

    b. Do they use good body mechanics to prevent back injuries and muscle strains? Do they feel that they would like more training in this?

3. Take some time to observe your staff to determine if they are doing things safely. Please take a moment to comment on safe behavior practices and correct any unsafe behavior. Please complete this safety survey and return the results to me by _____ .

Thank your for your cooperation in helping make VCU/MCVH/MCVP a safer place to work.

| | | | | |
|---|---|---|---|---|
| | **DATE:** | | | **LOCATION:** **Surveyor:** |
| | **Safety Audit Checklist** | | | |
| | **General Safety** | | | |
| | **YES** | **NO** | **N/A** | |
| 1. | | | | Are drawers kept closed at all times when not actually in use? |
| 2. | | | | Are chairs and other furniture in good condition? |
| 3. | | | | Are all compressed gas cylinders which may be in your area secured from falling over? |
| 4. | | | | During the survey, were all staff observed using proper body mechanics? |
| 5. | | | | In areas where items are stored or placed overhead, is there ready access to a suitable step stool, step ladder, or similar device? |
| 6. | | | | In storage areas, are the heavier items stored at waist level, with the lightest objects placed on the higher shelves? |
| 7. | | | | Is your area free of items which are likely to cause eye or head injuries, or which create an unusual bumping hazard? (Consider the use of protective padding.) |
| 8. | | | | Are all vehicles (carts, wheelchairs, etc.) in good operating condition? |
| 9. | | | | Has personal protection equipment (as required by MSDS or other standards) been provided to all employees needing it? Have they been trained on how to inspect and use the equipment? |
| 10. | | | | Is the area free of clutter? Are all hallways are clear of storage? No excess paper is improperly stored creating a fire risk? |
| | **Fire & Disaster** | | | |
| | **YES** | **NO** | **N/A** | |
| 11. | | | | Are all fire alarm pull stations and fire extinguishers accessible? |
| 12. | | | | Does all staff know the locations of at least 2 fire extinguishers in or near their work area? |
| 13. | | | | Does staff in the area know the proper reporting procedure if they find (or believe there may be) a fire? (RACER) |
| 14. | | | | Is all storage kept at least 18 inches below the ceiling (to keep sprinklers unobstructed)? |
| 15. | | | | Are all containers of powders, liquids and gases labeled as to contents? |
| 16. | | | | Are all areas in compliance with “No Smoking” policies (evidence of smoking)? If not, who is smoking? (Use the back of this sheet.) |
| 17. | | | | Are NO SMOKING signs prominently posted wherever oxygen cylinders are present? |
| 18. | | | | Are all wastebaskets and ashtrays in the area made of non-combustible material? |
| 19. | | | | Are all areas, other than approved kitchens, free of Toasters or Toaster Ovens? |
| 20. | | | | Is the area free of portable space heaters? |
| | **Hallways, Stairs, & Exit Paths** | | | |
| | **YES** | **NO** | **N/A** | |
| 21. | | | | Are all carts, wheelchairs, and/or other items in the corridors of healthcare buildings placed along the same side of the hall, or otherwise placed so that they do not create a hazard? |
| 22. | | | | Are the corridors kept clear of obstructions? |
| 23. | | | | Are all wet floors marked with "CAUTION, WET FLOOR" (or similar) signs? |
| 24. | | | | Is carpeting secure to the floor, unfrayed, free from tripping hazards, and generally in good condition? |
| 25. | | | | Are hard floor surfaces secure and free of tripping and slipping hazards? Are floor surfaces uneven or in need of repair? |
| 26. | | | | Are all EXIT signs illuminated? |
| 27. | | | | When opened and then released, do all fire doors close and latch properly? |

| | | | | |
|---|---|---|---|---|
| 28. | | | | Are stairwell handrails in good condition? |
| 29. | | | | Are stair treads in good condition? |
| 30. | | | | Are stairwells completely clear of obstructions and any objects? (Stairwells may not be used for storage or for smoking.) |
| 31. | | | | Is the housekeeping in this area adequate? |
| | **Electrical Safety** | | | |
| | **YES** | **NO** | **N/A** | |
| 32. | | | | Is access to electrical panels clear and not obstructed:? |
| 33. | | | | Are all electrical switches & circuit breakers identified?. If not, list the locations of those which are not on the back of this sheet. |
| 34. | | | | Are all electrical receptacles and cover plates in good condition? |
| 35. | | | | Are electrical cords and plugs in good condition? Check for damaged insulation, cut cords, splices, and tape wrapped around the cord - none of which should be present. |
| 36. | | | | Are only fused power strip extension cords, surge protectors, used (all 3 pins on the plug)? |
| 37. | | | | Is the area completely free of electrical power cord adapters of any type, except where approved by Plant Operations? |
| 38. | | | | Does all electrical equipment in the area appear to be in good condition? |
| | | | | **NOTE:Remove any defective equipment from service immediately!** |
| | **Laboatory** | | | |
| | **YES** | **NO** | **N/A** | |
| 39. | | | | Are the emergency showers, eyewash stations, and fire extinguishers accessible? |
| 40. | | | | Are aisles clear and unobstructed to permit ready access out of the area in case of fire or another emergency? |
| 41. | | | | Are flammable storage cabinets located out of hallways and exit paths? |
| 42. | | | | Are corrosives stored only on the lowest shelves? |
| 43. | | | | Are flammables, acids & bases all stored separately from each other? |
| 44. | | | | Are all refrigerators labeled to indicate whether or not they are safe for the storage of flammables? |
| 45. | | | | Are all non-explosion proof refrigerators entirely free of flammables? |
| 46. | | | | Are all chemicals labeled to indicate their contents. |
| 47. | | | | All chemical containers labeled to indicate any hazard which may be present (i.e. TOXIC, CORROSIVE, FLAMMABLE, etc.) |
| 48. | | | | Are Material Safety Data Sheets (MSDS) available for ALL products in the laboratory? |
| 49. | | | | Are food products, including beverages of any sort, kept out of the laboratory work environment at all times? |
| 50. | | | | During the survey, were all staff observed using proper body mechanics? |
| 51. | | | | During the survey, were all staff wearing the appropriate lab clothing? (No open toed shoes, no shorts) |
| | **Vehicles** | | | |
| | **YES** | **NO** | **N/A** | |
| 52. | | | | Oil Level OK |
| 53. | | | | Battery, Radiator, Brake and Windshield Washer Fluid Levels OK |
| 54. | | | | Battery Terminals, Air Filter OK |
| 55. | | | | Tires - Condition Good |
| 56. | | | | Rubber Hoses, Belts - (Fan, Generator, Alternator) OK |
| 57. | | | | Doors, Mirrors, Windshield and other Glass In Good Condition |
| 58. | | | | Head Lights, Signal Lights, Brake Lights and Other Lights OK |
| 59. | | | | Windshield Wiper Blades, Arms and Motor Operation OK |
| 60. | | | | Safety Belt for Each Passenger |
| 61. | | | | Horn Works |

| | | | | |
|---|---|---|---|---|
| 62. | | | | Other Items OK - (Defroster, Mechanical Condition, Paint etc.,) |
| 63. | | | | Safety Equipment - (Bumper Jack, Lug Wrench, Flares, 5 lb. ABC Extinguisher, Bungee Cords and/or Equipment needed to secure loads.) |
| 64. | | | | Mileage and Maintenance Log Used |

1. Please explain all no responses, and their locations on an attached sheet. Be as specific as possible. List actions taken to eliminate or correct the hazard, and list the person responsible for follow-up. Corrective action my require work orders, assistance from the MCVH Safety Office, MCVP Safety Office, OEHS, or staff training.
2. List any comments made by staff in your area, or your own observations, which may help reduce accidents.