Safety and Health Manual

WALTERTS STATE
THE GREAT SMOKY MOUNTAINS COMMUNITY COLLEGE

A Tennessee Board of Regents College
FACULTY/STAFF SAFETY AND HEALTH MANUAL

(all policies and procedures in this manual are superceded by TBR policies as well as State and Federal laws)
## COMMUNITY HEALTH/SAFETY AGENCY NUMBERS

### POLICE

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### MEDICAL (All Campuses)

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<td>Tennessee Department of Public Health</td>
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Sevierville
Sevierville Rescue Squad 865-453-5312
Sevier County Emergency Management 865-453-4919
Health Department 865-453-1032

Claiborne
Claiborne Rescue Squad 423-626-9484
Claiborne County Health Department 423-626-4291
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CHAPTER 1

WALTERS STATE’S SAFETY AND HEALTH PLAN

1.01. GENERAL INFORMATION

This Walters State Community College Safety and Health Manual records the college’s Safety and Health Plan. The manual is intended to provide general rules of safety and health and to establish basic procedures that should be implemented to further the ultimate goal of the college’s Safety and Health Plan.

The Safety and Health Manual is published and updated by the college’s Ad Hoc Safety & Health Procedures Committee. Questions and/or comments concerning the contents of the manual should be directed to the college’s Safety Administrator.

Periodically, changes will be made to the manual. Advance changes will be recorded in the Record of Changes form found in the front of the manual. The appropriate change information (i.e., printed on yellow sheets of paper) will be filed in chronological sequence after the Record of Changes form.

The changes will be chronologically numbered using the following format:

YY-MM-XX

where YY = year, MM = month, and XX = change number.

On a less frequent basis the manual will be reprinted and will incorporate all changes since the last reprinting in the main contents of the manual.

1.02. PURPOSE

The Walters State Community College Safety and Health Plan is established to provide and maintain an effective, comprehensive, and continuing safety and health effort that is in accordance with the policies of the college and appropriate local, state, and federal regulations. It is the policy of Walters State Community College to establish and maintain a climate conducive to the safe conduct of the college’s various missions.

The primary goal of the plan is the protection of life and property by prevention of all types of accidents including fire, occupational diseases and hazards, harmful chemicals, radiological exposure and other accidents resulting from equipment or personal failure. Benefits to Walters State Community College for such a plan extend to:
1. The safety and well-being of students and visitors to the college and the general public, who are on the premise(s) of the college,

2. The identification, evaluation, and control of potential financial loss to the college arising out of accidents and injuries to people and loss or damage to property, and

3. The reputation of Walters State Community college with the public and private business sector as being an institution concerned about good safety and health practices.

The plan is intended as a guide in planning, organizing, and controlling related programs in each division and department of the college. This includes all facilities occupied or operated by an officially recognized group of students or staff of Walters State Community College.

1.03. OBJECTIVES

The primary objective of the plan is to establish, promote, implement, and maintain good safety and health procedures, policies, and practices for the student body, faculty, and staff.

Other objectives of the Safety and Health Plan include:

1. Developing and recommending policies, rules, regulations, standards, etc. that will ensure the college’s compliance with local, state, and federal regulations.

2. Supporting each college unit in the implementation of their various safety and health programs.

3. Developing and maintaining effective college committees for the purpose of providing a safe campus, assuring compliance with standards, and facilitating communication between the committees and the campus community.

4. Developing and maintaining information on safety and health as an educational resource for the college.

5. Providing effective and beneficial training programs for the purpose of assuring safety and health awareness.

6. Conducting periodic evaluations, reviews, and audits of each college unit to assure compliance with the plan and all standards,
rules, and regulations issued by local, state, and federal agencies.

7. Maintaining safety and health records as required.

8. Facilitating technical problem solving activities to assure compliance with state and federal regulations.

9. Providing the president of the college information on safety and health activities.

1.04. CHANGES

Suggestions for additions and/or enhancements to the college’s Safety and Health Plan should be made in writing and communicated through the appropriate administrative approval process to the college’s Safety Administrators. Subsequent to review by the Safety Administrators, the change will be forwarded to the Ad Hoc Safety & Health Procedures Committee for review and development of a recommendation to the College Development and Safety & Health Committee. Approval by the College Development and Safety & Health Committee of the suggested change will be communicated to the president for his review and action. Changes not approved by the College Development and Safety & Health Committee will be returned through the related administrative structure with the reason as to why the change was not approved.
CHAPTER 2

OCCUPATIONAL SAFETY AND HEALTH ACT

2.01. INTRODUCTION

The Williams-Steiger Occupational Safety and Health Act of 1970 went into effect April 28, 1971. The purpose and policy of the act is "to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources." In March of 1972, the Tennessee Legislature enacted a comprehensive Occupational Safety and Health law which became effective on July 1, 1972 and is known as the "Tennessee Occupational Safety and Health Act of 1972" (i.e., see Appendix 2.01.00.A).

All rules, regulations and standards developed and required by the OSHA and TOSHA should be complied with by all operations of Walters State Community College. However, requests for variances from the OSHA standards will be processed in accordance with procedures outlined in Part 6, Tennessee Occupational Safety and Health Act of 1972. Requests for variances from the OSHA, Public Sector Plan will be processed in accordance with procedures outlined in III-9-5, Tennessee Occupational Safety and Health Act, Public Sector Plan. Requests for variances for the State University and Community College System of Tennessee Occupational Safety and Health Plan will be processed in accordance with procedures outlined in Part I-D of the State University and Community College System of Tennessee Occupational Safety and Health Plan. Preparation of variance requests will be the responsibility of the Safety Administrator and will be submitted to the Dean of Business and Finance for further action, after review and approval of the College Development and Safety & Health Committee.

All inspections conducted by the Safety Administrators will be made in an effort to comply with OSHA and TOSHA standards.

2.02. OCCUPATIONAL SAFETY AND HEALTH STANDARDS

In general, job safety and health standards consist of rules for avoidance of hazards which have been proven by research and experience to be harmful to personal safety and health. They constitute an extensive compilation of wisdom which sometimes applies to all employees. An example of this would be fire protection standards. A great many standards, however, apply only to workers while engaged in specific types of work, such as handling compressed gases.

It is the obligations of all employers and employees to familiarize themselves with those standards that apply to them and to observe them at all times.
Any employee who has been or is being exposed in a biologically significant manner to harmful agents or materials in excess of applicable standards will be promptly notified by his employer, and informed of corrective action being taken.

2.03. COMPLAINTS OF VIOLATIONS

Any employee (or representative thereof) who believes that a violation of a job safety or health standard exists which threatens physical harm, or that an imminent danger exists, may request an inspection by sending a signed written notice to the Department of Labor. Grounds for the notice and a copy will be provided the employer. Names of the complainants need not, however, be furnished to the employer.

If the Secretary finds no reasonable grounds for the complaint and a citation is not issued, the Commissioner is required to notify the complainants in writing of this determination of final disposition of the matter.

2.04. PENALTIES FOR VIOLATIONS

State and Federal laws provide stiff penalties for both employers and individual supervisors who violate safety and health laws. Furthermore, employers who discriminate (or encourage others to do so) against an employee because such employee has filed a complaint of, or testified in regards to a violation of State and Federal safety and health (hazardous situation) may be fined up to $1,000. However, failure to correct a non-serious condition within the prescribed time period can carry penalties up to $1,000 per day. In addition, there are other administrative violations for which citations may be issued. For example, falsifying records, reports, or applications can bring a fine of $10,000 and up to six months in jail for each occurrence. For any employer who willfully or repeatedly violates the Act, penalties of up to $10,000 for each violation will be accessed. Penalties for violations of State and Federal safety laws may include personal liability for executives punishable by fines and/or imprisonment.
CHAPTER 3
RESPONSIBILITIES FOR SAFETY AND HEALTH

3.01. COMMITTEES

3.01.01. College Development and Safety and Health Committee

The Walters State College Development and Safety and Health Committee has overall responsibility for advising the president on safety and health programs for the students, staff, and faculty. The committee is composed of individuals selected by the president and who represent all segments of the college community. The Vice President for Business Affairs chairs the committee. The responsibilities of the committee include:

1. Providing recommendations concerning fire, safety, health, and environmental matters,

2. Maintaining a current Comprehensive Health and Safety Plan that incorporates college policies, standards, and procedures relating to health and safety matters,

3. Evaluating, reviewing, and auditing all college facilities and practices for compliance with the college’s Comprehensive Health and Safety Plan,

4. Serving as a liaison between the college and local, state, and federal health and safety regulatory agencies and ensuring the college’s compliance with appropriate regulations,

5. Developing and maintaining information on health and Safety as an educational resource for the college, and

6. Promoting college constituents’ and visitors’ awareness of their responsibility in the college’s health and safety program.

More detailed information concerning the purpose and membership of the committee is contained in the college’s Handbook of College Advisory Councils and Committees.

3.02. PERSONNEL

3.02.01. Safety Administrators
The Assistant Director of Plant Operations and Facilities Planning is the college’s designated Safety Administrator. The Director of Campus Police is the Co-Safety Administrator for Security and Associated Requirements. These administrators have the overall responsibility for all college safety and health matters including maintenance of the institution’s Safety and Health Plan, and are responsible for the college’s compliance with local, state, and federal safety and health standards, rules, and regulations.

The Safety Administrators have the responsibility of recommending changes to policies and procedures to improve safety efficiency and changes in physical or structural alterations required to eliminate and/or control hazards. Also, the administrators have the responsibility to provide the technical support for the training and education for programs designed to create and maintain interest in safety.

The administrators will assist departments in determining the need for specific types of safety guards, apparel, storage containers, or any other safety equipment, and on request provide source and standards information. In addition, they are responsible for reviewing architectural drawings and specifications of new construction projects to assure adherence to safety, fire, and environmental regulations.

Other more detailed responsibilities and duties of the Safety Administrators are outlined, as appropriate, in additional sections of the manual.

3.02.02. Administrative Officials

Administrative officials are responsible for the safety and well-being of the employees they supervise while these employees are performing their expected duties. In particular, administrative officials should ensure a safe and healthy work environment is provided to their employees. Similarly, appropriate officials are responsible for the safety and well being of students and visitors while they are on college property. The Director of Human Resources is the Faculty/Staff coordinator for the Americans with Disabilities Act. The Dean of Student Support Services is the Student coordinator for the Americans with Disabilities Act.

Additionally, administrative officials are responsible for their employees’, their own, and, when appropriate, students’ and visitors’ adherence to the rules, regulations, operating standards, etc. contained in this manual and other related college policies and procedures. A current Walters State Safety and Health Manual is maintained on the college’s intranet.

Ready access to the manual should be facilitated to individuals with legitimate needs to use the manual. Administrative officials are responsible for apprising individuals under their jurisdiction of appropriate contents of this manual and as changes are made to the manual’s content.
Administrative officials should feel free to contact the Safety Administrators, and/or Health Clinic personnel to obtain assistance in enhancing a safe and healthy college environment. Suggestions for such enhancements that require use of college resources should be directed to the Safety Administrators, and/or a member of the College Development and Safety and Health Committee.

3.02.03. Employees

All employees are responsible for promoting a safe and healthy college environment. Everyone who works in or is a student at Walters State Community College is responsible for his/her own safety and the safety of those persons with whom he/she comes in contact or for whom he/she has operational responsibility. The safety and health responsibility of members of the faculty and staff is a direct relationship to their operational responsibility.

Employees should be aware of and adhere to appropriate contents of this manual as they pertain to their individual work situations. Employees should feel free to consult this manual as often as they have a need and to apprise their supervisors of suggestions to enhance the safe and healthy work environment.

3.02.04. Service Staff

Certain categories of service staff (e.g., custodians, security officers, and plant operations personnel) by the inherent nature of their work visit various parts of the college’s facilities. Such employees have an additional responsibility to report to their administrative officials unsafe and/or unhealthy working conditions that may be encountered during performance of their normal duties. In some instances corrective measures should be taken immediately by the employee (e.g., removal of items blocking a stairway or exit, closure of fire doors, and disconnection of illegal appliance connections).

3.03. EXTERNAL USERS OF COLLEGE FACILITIES

3.03.01. Contractors and External Groups/Individuals

Contractors and external groups/individuals using Walters State facilities are responsible for assisting in promoting a safe and healthy college environment. In this regard, they should be aware of and assist in enforcing appropriate rules, regulations, operating standards, etc. of this manual when such information pertains to their use of college facilities (See Chapter 7.02 of this manual).
3.04. PLAN COMPONENTS

3.04.01. Policies and Procedures

The Safety Administrators, Health Clinic personnel, and other appropriate college employees will be available to assist in formulating specific policies and procedures. The review and approval process to enhance the policies and procedures of the college’s Safety and Health Plan are outlined in Section 1.04 "Changes". It is the responsibility of administrators to enforce the appropriate policies and procedures within their areas and to eliminate safety and health hazards. Also, administrators are encouraged to facilitate enhancements to the Safety and Health Plan’s policies and procedures both from a college-wide perspective and the requirements of their particular work areas’ functions and associated duties.

3.04.02. Education

A campus wide safety-health promotion and publicity program will be conducted. Use is made of college bulletin boards and other news media to publicize the various aspects of safety and health education. The Safety Administrators and Health Clinic will be available to departments in promoting the Safety and Health Plan.

The Safety Administrators and Health Clinic have access to safety libraries of such organizations as the National Safety Council, the National Fire Protection Association, Tennessee Department of Public Health, and the various film libraries. The resources of the Safety Administrators and Health Clinic will be available to all members of the college. When circumstances permit, and where large quantities of materials such as posters, bulletins, etc., are required, a written request should be made to the Safety Administrators describing the desired type and quantity of publications and reasons for the request.

The Safety Administrators and Health Clinic will provide, on request, assistance to all departments in training personnel in fire prevention and minor fire fighting, accident prevention, environmental health and sanitation, personal first aid and other related subjects.

The Safety Administrators will from time to time publish safety fact sheets and statistics in order that administrators may have the current indicators of trends, hazardous areas, and deficiencies in the safety and health program. In addition, charts, graphs, posters, training aids, and other related items as deemed necessary will be prepared to further the safety and health goals of the college.

More detailed information concerning individualized training programs is contained in Chapter 5 "Training" of this manual.
3.04.03. Safety Engineering

The Safety Administrators will facilitate review of accident experiences and allied safety problems that arise on or are connected with Walters State Community College property, review reports of serious accidents and fires, and submit recommendations to correct hazardous conditions to increase safety efficiency. The Safety Administrators will perform an analysis of each accident and provide information to the relevant Department Head.

The Safety Administrators will conduct or cause to be conducted, safety and sanitation inspections of all facilities of the college. Details and inspection procedures of the safety and health inspection program are outlined in Chapter 6 “Inspections”.
4.01. ACCIDENT REPORTING

All accidents involving pedestrians, motor vehicles, bicycles, animals, or any fixed object, even though they may be considered of minor nature and may result in no lost time or medical expense to individuals, are to be reported in accordance with the instructions contained in the Walters State Community College Staff Policies and Procedures Manual Section 08:13:00 "Emergency Procedures". Accidents that require any first aid treatment must be reported.

For any incident involving any equipment or materials which have resulted in a bodily injury, such equipment or materials should be discontinued from use without any alterations, adjustments or manipulations, taking care to safeguard and protect all such items. Also, the Safety Administrators are to be notified of the incident.

Employees will be made aware by their supervisor that all accidents occurring on the job should be reported immediately to their supervisor or department head. In case of medical complications after the date of the accident, if all accidents are reported, it will not be necessary for the injured individual to then prove that the accident did occur while on Walters State property.

4.02. PERSONAL INJURY - STUDENT/VISITOR

The required procedures in the event of an injury to a student or visitor are outlined in the Walters State Community College Staff Policies and Procedures Manual Section 08:13:00 "Emergency Procedures".

4.03. EMPLOYEE WORK RELATED ILLNESS/INJURY

The required procedures for any employee who is injured or becomes ill due to occupational duties while working at Walters State are outlined in the college’s Staff Policies and Procedures Manual Section 08:13:00 “Emergency Procedures”.

4.04. ATHLETIC INJURIES

The required procedures in the event of an injury to a Walters State student participating in intercollegiate athletics are outlined in the college’s Staff Policies and
4.05. OCCUPATIONAL SAFETY AND HEALTH ACT REQUIREMENTS

The following records are maintained by the Human Resources Office as required by the Tennessee Occupational Safety and Health Act.

1. First Report of Employee Injury of Illnesses (OSHA Form 301). (i.e. see Appendix 4.05.00.A)

2. Log of Occupational Injuries and Illnesses (OSHA Form 300) (i.e., see Appendix 4.05.00.A)

3. Summary of Work-Related Injuries and Illnesses (OSHA Form 300A) (i.e., see Appendix 4.05.00.A). A copy of this form will be posted in the College Center Building from February 1 to April 30 of the year following the year covered by the form.

Records described above will be retained for a period of 5 years following the end of the year to which they relate.

4.06. CLAIMS

The required procedures for claims alleging injury resulting from negligence of the institution and for workers compensation claims are outlined in the Walters State Community College Staff Policies and Procedures Manual Sections 05:06:00 "Claims Before the Tennessee Claims Commission" and 08:13:00 "Emergency Procedures".
CHAPTER 5

TRAINING

5.01. GENERAL

Training videos, slides, etc., are available to appropriate individuals. A current inventory of safety and health training media is maintained in at the College Center Room 314E in CCTV. The Safety Administrators and the Health Clinic are available to assist in satisfying safety and health training needs.

5.02. HAZARDOUS CHEMICAL RIGHT TO KNOW LAW

In compliance with the Hazardous Chemical Right To Know Law, all new employees will be trained in the requirements of this legislation as part of the new employee induction program (See Chapter 23 “Hazardous Chemical Right To Know Law”, of this manual). Videos available in CCTV explain this law, respond to the requirements of the law, and address working with various chemical substances. Employees are encouraged to view those videos that are relevant to their individual work situations. A listing of available Hazardous Chemical Program Video Materials is available in Appendix 23.04.07.B.

5.03. TRAINING PROGRAMS

All new employees will be informed of the college’s Safety and Health Plan and be required to be aware of provisions related to their specific responsibility. In addition to this orientation process, specific job functions may require additional training.

Thus, each division and/or department, as appropriate, will establish a suitable health and safety training program designed to:

1. Instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposures to illness or injury.

2. Instruct employees who are required to handle or use poisons, caustics, and other harmful substances, in their safe handling and use, and make employees aware of the potential hazards, personal hygiene, and personal protective measures required.

3. Instruct employees who may be exposed to environments where harmful plants or animals are present, the dangers of the
environment, how to avoid injury, and the first aid procedures to be used in the event of injury.

4. Instruct employees required to handle or use flammable liquids, gases, or toxic materials in the safe handling and use of these materials, and make employees aware of specific requirements contained in Subparts H, M, and other applicable subparts of OSHA Standards.

5. Instruct all employees required to enter into confined or enclosed spaces as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The college will comply with all specific regulations that apply to work in dangerous or potentially dangerous areas.

6. For purposes of (5) above, “confined or enclosed space” means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility, vaults, tunnels, pipelines, and open top spaces more than four (4) feet in depth such as pits, tubs, vaults, and vessels.

The department head is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions.
CHAPTER 6

INSPECTIONS

6.01. PURPOSE

There are various inspections that will be conducted at regularly scheduled intervals. The Safety Administrators will conduct or cause to be conducted safety and fire inspections of all college buildings to ensure compliance with current regulations.

6.02. INSPECTION FREQUENCY AND PROCEDURE

In addition to semi-annual general safety inspections, the Safety Administrators will conduct or cause to be conducted the following inspections of:

1. Emergency light systems,
2. Fire extinguishers,
3. Fire alarm systems,
4. Automatic sprinkler systems,
5. Fire hydrants,
6. Standpipes, and
7. College housing.

The Safety Administrators will be responsible for initiating corrective measures where applicable and for conducting follow-up inspections to ensure appropriate corrective measures have been implemented.

6.03. PERSONAL OBSERVATIONS

In those instances that an employee, student, and/or visitor notices that safety and/or health principles are being violated (e.g., emergency/normal light system not working, water/gas leakages, or exit/entrance blockages) the individual is to notify one of the Safety Administrators and the person exercising operational control over the individual. It is the responsibility of the supervisory person and the Safety Administrators to ensure appropriate corrective measures are taken.
CHAPTER 7

GENERAL SAFETY AND HEALTH RULES

7.01. EMERGENCY TELEPHONE PROCEDURES

The procedures to obtain assistance in the event of an emergency are outlined in Section 21.03 "Procedures for Summoning Aid" of this manual. The Campus Security Office is to be contacted regarding any emergency (e.g., medical assistance needed, report a fire, explosion, and/or water or gas leak).

7.02. PUBLIC ASSEMBLY ACTIVITIES

In order to ensure timely evacuation of buildings in the event of fire or other emergency, all interior and exterior exits (i.e., to include fire escapes) will be properly marked and illuminated when the building is in use. All exit lights must be maintained in good order. Exit doors must open outward and be in proper operating condition.

Doors, to include sections of double doors, will not be locked while groups of persons are present in the building. Exterior doors of theatres, large assembly halls, and classroom buildings will be equipped with panic hardware in useable condition. All aisles and hallways leading to exits must be kept free of debris, storage, or other obstruction at all times. Landings, stairs, and steps will be equipped with the proper number of handrails maintained in good condition. Exit routes must be adequately illuminated and all exit lights must be maintained in good order. Floor surfaces must be kept clean, in good condition, and cleared of slipping and tripping hazards.

7.02.01 Activities, Events, Shows, and Meetings

Events in campus buildings or on College grounds shall meet the provisions of applicable state laws and provide for the safety of building occupants and event participants.

Prior to the scheduled commencement of any activity, event, show, meeting, etc. the person in charge will inspect every required exit and way of approach thereto. If any exit or exit access is locked, obstructed, or otherwise unsuited for immediate use, the scheduled program will not begin, nor will admittance to the place of assembly be permitted until necessary corrective action has been completed.

Immediately prior to the start of the program the person in charge of the program, or his/her representative will be responsible for notifying all attendees concerning the location of the exit(s) to be used in case of fire or other emergency and other pertinent information (e.g., smoking, food, or drink not permitted).
7.02.02 Life Safety Code

Laws covering egress facilities, posting of occupant capacity of a structure or area, and other essential items to provide for emergency egress and life safety are outlined in the Life Safety Code and Building Code as adopted by the State of Tennessee. State laws and College policies covering smoking, decorating, tobacco use, alcohol, etc. shall be observed where applicable.

College policy hereby establishes that:

1. Adequate exit ways, exit access and exits shall be provided and maintained from all assembly areas at all times. Exit ways shall be maintained clear and unobstructed at all times the area is occupied. Concessions, ticket counters, aisle markers, spotlights, etc. shall not be permitted to obstruct exit ways in any way.

2. Only the installed number of seats shall be occupied during any event. Aisle spaces shall be kept clear and shall not be used to seat or stand additional occupants.

3. The person or organization in charge of the event shall be responsible for controlling the number of occupants admitted. The responsible "charge" person shall be readily available prior to, during and until the event is over and the crowd has dispersed.

4. All exits in any building being used for public events shall be unlocked to permit egress as soon as occupants are admitted, and shall not be locked or otherwise secured until all occupants have left the building. All exit lights shall be adequately illuminated during such events. Required emergency lighting shall be operable.

5. Applicable "NO SMOKING," tobacco and alcohol rules shall be observed and enforced at any time an event is in progress. Adequate signs designating "NO SMOKING" areas will be posted as required.

6. All fire protective and safety devices must be kept clear and readily accessible at all times.

7. The College’s Safety Administrator or his duly authorized representative shall have the authority to cancel, delay or stop any event which does not comply with applicable laws, policies or regulations and which, in their opinion, would result in jeopardy to life safety of those in attendance.
Additional information concerning the use of campus property and facilities is contained in the Walters State Community College Catalog in the section titled "Policy on Use of Campus Property and Facilities".

7.02.03. Social Activities

Organizations or departments desiring to hold large social activities on campus will, at the time of requesting permission from their appropriate agency, notify a Safety Administrator. The use of open flames for lighting in places of public assembly is a potential fire hazard which must be controlled.

In considering decorations for places of public assembly, no flammable decorations, including draperies, will be used. Approval will not be granted for the use of decorations until such time that they have been demonstrated to be fire resistant. Authorized decorations permanently hung will be tested and inspected at 30-day intervals by the individual responsible for the building or his/her appointed representative.

7.03. FACILITIES

Building foundations, walls, and roof will be of sound structure and free from cracks and unsealed openings. Walls and ceilings must be smooth, free from cracks, in good repair, clean, and will be reasonably soundproof. Doors and windows will be tight fitting to prevent drafts and heat loss. Fire escapes and chimneys will be in good repair.

Floors must be smooth, free from cracks, of durable material and in good repair. Floors will be properly cleaned and maintained at all times. All wood floors will be sealed with a penetrating seal to preserve them and to make them attractive. Concrete floors will be smoothly-troweled and will be treated by sealing, painting, or other acceptable method. Terrazzo floors will be properly sealed to prevent staining.

Toilet room floors must provide an easily cleanable surface. These floors must be of waterproof, non-absorbent material such as sealed concrete; vitrified or glazed tile or terrazzo. Toilet room floors and wall surfaces to a minimum height of five inches above the floor must be of non-absorbent materials and must have a cove at floor level.

Doorways and doors will conform to requirements outlined in Chapter 20 "Means of Exiting Buildings" of this manual. All outside door and window openings except in air conditioned buildings must be effectively screened during insect season. All fire doors must remain closed. Exit doors will be equipped with appropriate panic hardware and maintained in proper working order.

Outside windows should be washed three or four times each year and inside windows and surfaces as often as once a month or more frequently as required. Glass windows in doors and cases may require weekly washing. Keeping windows clean yields
dividends, as dirty windows reduce light by as much as 15% to 50%. All glazing material will be "safety glazing material" and must meet the test requirements of ANSI Standard Z-97.1-2004 and TCA 53-2549 to 53-2554.

Electrical wiring, equipment, and installations will conform to National Fire Protection Association (NFPA) Code 70.

At no time will rags, mops, waste paper, and other such materials be stored under stairways, in exit ways or classrooms.

All fire alarm and fire extinguishing equipment will conform to requirements of Chapter 22 "Fire Protection". Carbon tetrachloride type fire extinguishers are prohibited.

Heating, ventilating, and air-conditioning systems and the installation thereof for college buildings will conform to the applicable provisions of NFPA codes and recommendations of American Conference of Governmental Industrial Hygienists. The central energy plant will be adequate for maintaining temperatures of 70 F. to 76 F. in even the most severe weather conditions.

Lighting will conform to the following minimum illuminating levels, per the Illuminating Engineering Society of North America (IESNA):

1. Classrooms, study halls, lecture rooms, libraries, offices, art rooms, shops and laboratories - 50 foot candles.
2. Drafting rooms, typing rooms, sewing rooms, and bench work - 100 foot candles.
3. Corridors, elevators, reception rooms, gymnasiums, swimming areas, and stairways - 20 foot candles.

7.04. COLLEGE POLICIES AND PROCEDURES

Other college safety and health policies and procedures that are contained in the Walters State Community College Policies and Procedures Manual are identified as follows. The reader should reference the appropriate section of the Staff Policies and Procedures Manual for these components of the college’s Safety and Health Plan.

<table>
<thead>
<tr>
<th>Policy</th>
<th>Section Number</th>
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<tbody>
<tr>
<td>Academic and Classroom Misconduct</td>
<td>04:08:00</td>
</tr>
<tr>
<td>Counseling Services</td>
<td>04:11:00</td>
</tr>
<tr>
<td>Custodial Services</td>
<td>05:03:00</td>
</tr>
<tr>
<td>Claims Process</td>
<td>05:06:00</td>
</tr>
</tbody>
</table>
7.05. FIREARMS POLICY

It is a violation T.C.A. 39-17-1309 for any person to possess or carry, whether openly or concealed, with the intent to go armed, any firearm or other weapon which might inflict bodily harm. No firearms will be permitted on the Walters State Community College campus or worn by any Walters State student or employee at any time other than those designated below:

1. Full or part-time campus police officers, certified by the Peace Officer’s Standards and Training Commission and employed by the administration or board of trustees of any public or private institution of higher education may carry firearms on campus in the discharge of their official duties.

2. Military personnel may not carry firearms, openly or concealed, unless in the discharge of their official duties.

3. Officers of the state, or of any county, city or town, charged with the enforcement of the laws of the state, may not carry firearms on campus unless in the discharge of their official duties.

Campus security officers or civilian staff; who are not certified officers by the Peace Officers Standards and Training Commission; may not carry firearms openly or concealed on campus property at any time.

7.06. ACCIDENT PREVENTION SIGNS AND TAGS

Signs and symbols required by this part will be visible at all times when work is being performed, and will be removed or covered promptly when the hazard no longer
exists. Refer to the Occupational Safety and Health Act Code of Federal Regulations, Parts 1910.144 and 1910.145 for examples and specifications of marking physical hazards. The OSHA standards for Accident Prevention Signs and Tags are summarized below:

1. **Danger signs** will be used only where an immediate hazard exists. These signs will have red as the predominate color for the upper panel; black outline on the borders; and white lower panel for additional sign wording.

2. **Caution signs** will be used only to warn against potential hazards or to caution against unsafe practices. These signs will have yellow as the predominate color; black upper panel and borders; yellow lettering of "caution" on the black panel; and the lower yellow panels for additional sign wording. Black lettering will be used for additional wording.

3. **Exit signs** will be lettered in legible red letters, not less than 6 inches high, on a white field and the principal stroke of the letter will be at least three-fourths inch in width.

4. **Safety instruction signs**, when used, will be white with green upper panel with white letters to convey the principal message. Any additional wording on the sign will be black letters on the white background.

5. **Directional signs** will be white with a black panel and white directional symbol. Any additional wordings on the sign will be black letters on the white background.

6. **Traffic signs** will be posted in construction areas with legible traffic signs at the points of hazard. All traffic control signs or devices used for protection of construction workmen will conform to American National Standards Institute 6.1-1961, Manual on Uniform Traffic Control Devices for Streets and Highways.

7. **Accident prevention tags** will be used as a temporary means of warning employees of an existing hazard, such as defective tools, equipment, etc. They will not be used in place of, or as substitute for, accident prevention signs.

7.07. PURCHASE/DESIGN OF SAFETY EQUIPMENT

The Safety Administrator will assist departments upon request in determining the need for specific types of safety guards, apparel, storage containers, or any other safety
equipment, and provide source and standards information.

7.08. HOUSEKEEPING

During the course of construction, alterations or repairs, forms and scrap lumber with protruding nails, and all other debris will be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures. Combustible scrap and debris will be removed at regular intervals during the course of construction. Safe means will be provided to facilitate such removal.

Containers will be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. will be disposed of at frequent and regular intervals.

In appropriate instances Health Clinic and laboratory wastes and used supplies (e.g., soiled dressings, band aids, one-user needles, etc.) will be placed in bio-hazard bags for specialized disposal. Other hazardous materials designated for disposal will be processed as outlined in other appropriate sections of this manual.

7.09. LIFE SAVING EQUIPMENT

7.09.01. Safety Belts, Lifelines, and Lanyards

Lifelines, safety belts, and lanyards will be used only for employee safeguarding. Any lifelines, safety belt, or lanyards actually subjected to in-service loading, as distinguished from static load testing, will be immediately removed from service and will not be used again for employee safeguarding.

Lifelines will be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds. Lifelines used in areas where the line may be subjected to cutting or abrasion, will be a minimum of 7/8-inch wire core manila rope. For all lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,400 pounds, will be used. Safety belt lanyards will be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope will have a nominal breaking strength of 5,400 pounds.

All safety belt and lanyard hardware will be drop forged or pressed steel, cadmium plated in accordance with type 1, Class B, plating specified in Federal Specification QQ-P-416. Surface will be smooth and free of sharp edges. All safety belt and lanyard hardware, except rivets, will be capable of withstanding a tensile loading of
4,000 pounds without cracking, breaking, or taking a permanent deformation.

7.09.02. Safety Nets

Safety nets will be provided when workplaces are more than 25 feet above the ground or water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts are not practical. Where safety net protection is required, operations will not be undertaken until the net is in place and has been tested.

Nets will extend 8 feet beyond the edge of the work surface where employees are exposed and will be installed as close under the work surface as practical but in no case more than 25 feet below such work surface. Nets will be hung with sufficient clearance to prevent user’s contact with the surfaces or structure below. Such clearances will be determined by impact load testing.

The mesh size of nets will not exceed 6 inches by 6 inches. All new nets will meet accepted performance standards of 17,500 foot-pounds minimum impact resistance as determined and certified by the manufacturers, and will bear a label of proof test. Edge ropes will provide a minimum breaking strength of 5,000 pounds. Forged steel safety hooks or shackles will be used to fasten the net to its supports. Connections between net panels will develop the full strength of the net.

7.09.03. Electrical Protective Devices

Rubber gloves, blankets, sleeves, insulating boots, and/or line hose will be worn or used by those employees subjected to contact of high voltage sources. Rubber gloves and blankets will be dielectrically tested every 60 days and all other equipment will be visually inspected every time it is used.

7.09.04. Additional Information

Additional information is provided in Chapter 8 “Personal Protective Equipment” of this manual.

7.10. COLOR CODE

The college recognizes the American National Standard Code Z.53.1-1967 as the best authority for good practice in marking of physical hazards and the identification of certain equipment. As defined in the code these are the best meanings of color usage:

<table>
<thead>
<tr>
<th>COLOR</th>
<th>DESIGNATION</th>
</tr>
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### 7.11. STORAGE, USE, AND DISPOSAL OF FLAMMABLE LIQUIDS

For the purpose of this plan, flammable liquids may be defined as those liquids with a flash point of 100 F. or less and having a vapor pressure not exceeding forty pound per square inch (absolute) at 100 F.

Flammable liquid containers in excess of one (1) gallon will not be stored in buildings, laboratories, storerooms, or garages. The exceptions are warehouses or vaults designed for this type of storage. Flammable liquids will be dispensed from and stored in standard safety containers specifically constructed to withstand moderate mechanical shock and to provide fire safety features such as vapor control, emergency venting, leak-tight self-closing covers, and flame arrester protected pour spouts. Approved or listed standard safety containers will have the listing or approval mark of a nationally recognized testing laboratory such as Underwriters Laboratory (UL). Damaged or defective safety cans should be replaced and flammable liquids should never be stored in open containers. Dispensing drums will be properly grounded and bonded. Flammable liquids required in small quantities for frequent use will be stored in approved safety cans in a metal cabinet or closet ventilated to the outside where practical.
Flammable liquids will not be used for cleaning floors, clothing, or equipment.

For those laboratories and shops which do not have a satisfactory flammable liquid disposal system, flammable liquids requiring disposal will be segregated and stored until disposition instructions are received from a Safety Officer. At no time will flammable liquids be poured down drains or sewers. In those cases not covered by specific guidance, a Safety Officer will be contacted.

All containers for storage, issue and transport of flammable liquids will be clearly marked in accordance with Section 326 of the National Fire Code. All devices for closing or sealing such containers will be in good operating condition.

More detailed information concerning flammable liquids is contained in Chapter 24 "Hazardous Materials" of this manual.

7.12. PAINTING AND PAINT STORAGE

Paints and painting referenced in this manual include varnish, shellac, or similar commodities.

Painting, other than minor touch-up or home maintenance type projects will be done only in specified areas designated for this purpose.

Indoor spray painting will be permitted in properly equipped and specifically designated spray painting booths. All spray booths, paint rooms and equipment will be thoroughly cleaned at the close of each day’s work.

Paint should be stored in sealed containers. Paint in unsealable containers will be stored at a safe distance from any combustible type construction.

Wiping rags, strainers, drop cloths, and paint stained work clothing will not be stored with paint thinners, turpentine or other combustible materials. Paint brushes will not be left to soak in cleaning fluid but will be cleaned and suspended for air drying and the cleaner will be disposed of or returned to the original container.

All paint spills will be cleaned up immediately. Benches, floors, and all equipment will be cleaned of accumulations of paint. "No Smoking" signs of large letters on contrasting color background will be conspicuously posted at all spray paint booths. All waste masking paper will be removed from the building at the close of each day’s work.

Smoking is prohibited in any part of the paint shop.

Empty paint containers will be disposed of daily.
Each supervisor will be held responsible for and will personally inspect all fire extinguishers and will assure him/herself of their operating condition before ordering work to commence.

For further information on spray finishing, construction of spray booths, storage of materials, etc., see Chapter 24 "Hazardous Materials" of this manual.

7.13. MATERIALS HANDLING

Stacked materials will have a minimum clearance of thirty-six (36) inches between the top of the stacks and joists, rafters, or roof trusses. Aisles will be clearly designated by the use of yellow stripes. For further details on materials handling and storage, see Chapter 24 "Hazardous Materials" of this manual.

Where fire fighting equipment locations and manual fire alarm boxes are not visible from the center aisle, direction signs with white letters on a red field will be erected at appropriate locations.

Approved trucks will bear a label or some other identifying mark indicating approvals by the testing laboratory. All rider high lift trucks will be fitted with an approved overhead guard. Only trained and authorized operators will be permitted to operate a powered industrial truck.

When leaving a powered industrial truck unattended, lift will be fully lowered, controls neutralized, power shut off, brakes set, and key removed. Spinner knob will not be installed unless furnished with original equipment. Power-operated industrial trucks will not be used in atmospheres containing hazardous concentrations of acetylene, butadiene, ethylene oxide, hydrogen, propylene oxide, acetaldehyde, cyclopropane, diethl ether, ethylene, or unsymmetrical dimethyl (UDMH).

Persons in charge of warehouses will notify a Safety Officer upon receipt of unusually large quantities of hazardous materials.

7.14. ELECTRICAL SAFETY

7.14.01. General

No unauthorized person will tamper with electrical fuse boxes, alter existing wiring, or install electrical wiring.

Combustible material will not be placed within eighteen inches of a light bulb.
7.14.02. Extension Cords

Extension cords and electrical appliance wiring will be maintained in good repair and must bear the Underwriter Laboratory label (UL) or meet standards of the National Fire Protection Association (N.F.P.A.) Code 70. Extension cords will not be used outside the room in which the fixture outlet is located. Under no circumstances will any extension cord or electrical cord be spliced. Household type extension cords will not exceed eight (8) feet in length. All electric cords will be properly grounded when in use. Use of emergency multiple outlets is prohibited.

7.14.03. Appliances

Only appliances bearing the Underwriter Laboratory label (UL) will be connected to the electrical distribution system. Appliances that are deemed unsafe will be removed. Appliances available for use will be considered in use. Hot plates, microwave ovens, coffee pots, electric irons, and other heating equipment (i.e., other than those in cafeterias) will be placed on non-combustible surfaces. They will not be closer than eighteen inches to any combustible wall unless the surface of the wall is shielded by a metal or other appropriate covering extending no less than twelve inches above the appliance.

7.14.04. Occupational Safety and Health

For further details on electric appliances and codes, installations, and work are outlined in Chapter 16 "Electrical Wiring, Apparatus, and Equipment" of this manual and the National Fire Protection Association Code 70.

7.15. WELDING OPERATIONS

Welding or cutting will not be done in the following situations:

1. In a sprinklered building while such protection is impaired,
2. In the presence of explosive atmospheres, and
3. In areas near the storage of quantities of readily ignitable materials.

Before cutting or welding is permitted, the area will be inspected by the individual responsible for authorizing cutting and welding operations. The responsible individual will designate precautions to be followed in granting authorization to proceed and assure the following:
1. The area is clear of combustibles in a radius of 35 feet. Combustible floors will be kept wet, covered with damp sand, or protected by fire resistive shields. Where floors have been wet down, personnel operating arc welding or cutting equipment will be protected from possible shock,

2. Ducts and conveyors systems that might carry sparks to distant combustibles are suitably protected or shut down,

3. Where cutting or welding is done near walls, partitions, ceiling, or roof, precautions to prevent ignition of combustibles on the other side will be provided,

4. Welding will not be attempted on a metal partition, wall, ceiling, or roof having a combustible covering, nor on walls or partitions of combustible sandwich-type panel construction,

5. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roof will not be undertaken if the work is close enough to cause ignition by conduction, and

6. Portable fire extinguishers, appropriate for the type of possible fire, will be concentrated at the work area. Where hose lines are available, they will be connected and ready for services.

For personal protective equipment, duties of fire watcher, ventilation and other information concerning welding, see Chapter 11 "Welding, Cutting, and Brazing" of this manual.

7.16. LABORATORY FURNACES AND KILNS

Metal pouring is a particularly hazardous operation, due to the possible presence of impurities in the molds, ladles, pouring troughs, or the metal itself which could cause "spluttering" or "puddling".

Individuals operating metal melting furnaces or kilns must be provided with and required to wear approved eye shield, gloves, and aprons. Bare flesh should not be exposed during the pouring or removal of heated items.

The appropriate class fire extinguishers should be immediately available in the furnace area in the event of fire.
7.17. AUTOMOTIVE FACILITIES

The prevalent cause of accidents in automotive maintenance facilities is unsatisfactory housekeeping. In automotive maintenance shops, grease on floors and greasy tools account for the greatest number of accidents. In order to eliminate these hazards, the following safety rules will apply:

1. Satisfactory housekeeping conditions must prevail at all times,

2. Grease racks and lifts must be kept clean and free of grease and debris at all times,

3. Droplights used should be equipped with vapor proof globes and shields. Droplights will be of approved type and under no condition will the cord be spliced,

4. Oil and grease soiled rags will be kept in a self-closing metal container and removed from the area daily or when capacity is reached. Under no circumstances should the container be left uncovered,

5. Gasoline or other flammable liquids must not be used to clean vehicle parts, floors, or other materials. Only approved cleaning solution or plain soapy water will be used for cleaning. Flammable substances must be stored in approved storage facilities. Containers will be kept closed at all times when the material is not in use,

6. Smoking is not permitted in automotive maintenance facilities,

7. Serviceable fire fighting equipment of proper type and capacity will be located strategically within the areas,

8. Vehicle engines or machinery exhausting toxic vapors will not be operated in enclosed areas without a safe exhaust system being utilized,

9. Air compressors will be properly grounded, control switches in proper repair and stop switches painted red. Drive belts will be equipped with a guard to prevent an individual, tool or clothing from being caught in a drive unit, and

10. "No Smoking" at the fuel dispensing station will be strictly enforced. This includes occupants of the vehicle receiving fuel.
7.18. FURNACE AND MECHANICAL ROOMS

Fires and accidents in heating plant areas are most often caused by spontaneous combustion of materials stored in the vicinity of heating plants, or development of excessive heat by improper ventilation. Furnace, incinerator, and mechanical rooms will be kept clean at all times and will not be used as storage areas for any materials. Those furnaces that use coal as fuel, or incinerators used for burning trash must have the ashes kept in metal containers outside the building and ten feet from any frame wall.

Insufficient oxygen fed to furnaces and incinerators result in improper combustion, thereby reducing the efficiency of the system and increasing the production of carbon monoxide. In order to ensure proper functioning of heating plants, furnaces and incinerators will be properly adjusted and outside ventilators of proper size will be kept clean and clear.

7.19. DISPOSAL OF CONSTRUCTION WASTE MATERIALS

Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the buildings, an enclosed chute of wood, or equivalent material, will be used. For the purpose of this part, an enclosed chute is a slide, closed in on all sides, through which material is moved from a high place to a lower one.

When debris is dropped through holes in the floors without the use of chutes, the area onto which the material is dropped will be completely enclosed with barricades not less than 6 feet back from projected edge of the opening above. Signs warning of the hazard of falling materials will be posted at each level. Removal will not be permitted in the lower area until debris handling ceases above.

All scrap lumber, waste material, and rubbish will be removed from the immediate work areas as the work progresses. Waste material will be disposed of in the sanitary land-fill under appropriate supervision. All solvent waste, oily rags, and flammable liquids will be kept in fire resistant covered containers until removed from the worksite.

7.20. EMERGENCY LIGHTING SYSTEM

Some of the structures on the campus are equipped with emergency lighting systems which would permit uninterrupted service in critical areas and/or exit facilities under adverse conditions. In order to ensure that these emergency lighting systems are functioning properly, the emergency system will be checked periodically. The tests should be conducted at times which would cause least disruption.
7.21. POWER MACHINERY AND EQUIPMENT

Supervisors will allow only experienced personnel to operate power machines and will give proper instruction in their safe operation. All electrical machinery will be properly grounded and control switches will be located at the point of operation best suited to control the equipment.

Power saws, shapers, and other equipment must have the proper type safeguards in place when the equipment is being operated. Protective eye equipment will be used when operating machines which could cause particles to be discharged in such manner as to cause injury.

7.22. POWER MOWERS AND RELATED EQUIPMENT

Areas to be cut should be examined for loose objects such as tins, pieces of wire, or other objects. Serious injury can result from objects thrown by a rotating blade.

The engine will be cut off when filling with gas. No smoking is permitted when filling the machine with gas. Fuels will be carried in approved safety cans.

Keep hands and feet from under machine. Suitable foot, eye, and head protection should be worn when operating power mowers. Avoid slopes that are too steep for machine, whether using a push mower or riding mower.

For further details on power mowers and related hand held equipment, see Chapter 10 "Hand and Portable Power Tools and Other Handheld Equipment" of this manual.

7.23. USE OF LADDERS

Prior to using a ladder, an inspection of uprights and ladder shoes should be made. In addition, the rope on extension ladders should be inspected. Step ladders should be checked for unsafe hinges as well as steps and uprights. Only a clear type varnish or shellac should be used in the painting of ladders. Before a new ladder is placed in service, it will be equipped with rubber shoes and wall grips.

When straight or extension ladders are used on hard surfaces, they must be held or firmly lashed. The practice of lashing sections together in order to lengthen the ladder is strictly forbidden. Ladders should be so placed that they offer the least possible impediment to the public or to traffic.
The person using the ladder will avoid overreaching. Move the ladder rather than take a chance on the ladder overturning to the side.

For further details or requirements for different types of ladders, see Chapter 17 "Walking/Working Surfaces" of this manual.

7.24. GRINDERS AND BUFFERS

Considerable eye damage results from improper use of grinders. In order to prevent this danger, wheels will not be used without the metal guard and eye shields in place. In addition, prior to use, the wheels should be checked out for scoring or cracking. When new wheels are installed, the RPM capacity of the wheels should be checked against the maximum RPM capacity of the motor.

A face shield will be hung on or near each grinder and is to be worn by any person operating the grinder. Work rests will be adjusted close to the wheel with a maximum opening of 1/8 inch.

For further details see Chapter 9 "Machine Guarding and Mechanical Safety” and Chapter 10 "Hand Held Equipment” of this manual.

7.25. PRESSURIZED TOILETRIES CONTAINERS

Modern pressurized packaging of such commodities as hair spray, starch, deodorant and shaving cream induces unique safety hazards in domiciles and other areas where used. "Empty” pressurized containers, many of which contain flammable materials, leave a residue of gas and material which, if improperly disposed of, may prove injurious.

The following precautions should be followed when using or disposing of these containers:

1. Observe the cautions printed on the can--do not use flammable material near open flames,

2. Empty pressurized cans should not be placed in trash containers or waste baskets. Place them next to such containers so that custodial personnel may dispose of them safely, and

3. Do not throw cans in incinerators. Sudden application of heat can cause a violent explosion.
7.26. HIGH PRESSURE GAS CYLINDERS

Gas cylinders may contain up to 3,000 psi pressure. Accidents have occurred when the heads of these cylinders were broken off. Escaping gases create jet action of sufficient force to propel the cylinders through the walls of buildings, create fires and maim persons in the vicinity. Flammable gases create additional hazards of catalytic action or oxidation under certain conditions.

Improper storage, movement and use of gas cylinders is considered one of the major safety hazards on the campus. Cylinders will be properly segregated and securely fastened in storage, movement, and use. Operators must ensure that head caps are firmly in place when not in use. Use only the proper gauges when metering the gases.

For further details see Chapter 24 "Hazardous Materials" of this manual.

7.27. RECREATION ACTIVITIES

Most accidents occurring during participation in recreation activities can be attributed to one or more of the following causes:

1. Inadequate leadership,
2. Faulty equipment,
3. Inadequate recreational facilities,
4. Irresponsible student behavior,
5. Insufficient skill,
6. Poor physical condition, or
7. Risks inherent in the activity itself.

Accidents can be avoided if the student will follow personal rules of safety such as:

1. Never continue playing a game when fatigued,
2. Do not attempt a hazardous new skill, except under the direction of a qualified person,
3. Wear proper personal protective equipment,
4. Never try any skill beyond your range of ability,
5. Avoid taking part in activities in overcrowded space,
6. Never take advice or instruction from an unqualified person, and
7. Use sports equipment only for the purpose for which it is intended.

Spectators can also be injured unless safety regulations are followed. Recreation activities should be played only within the designated areas which are separated from populated areas and are considered safe.

7.28. ALONE ON CAMPUS AT NIGHT

All persons should be aware of the dangers that might exist when walking alone at night. If at all possible, they should:

1. Not walk alone at night,
2. Keep to well-lighted areas,
3. Avoid shortcuts which, although quicker, may be potentially unsafe areas,
4. Develop a sort of "second-sight", and
5. Be constantly alert.

When approaching their parked car, they should unlock the door quickly, check to make certain no one is in the back of the car, and make sure they have the key ready in their hand (i.e., do not fumble for it in a purse or pocket). They should get in, lock the door, and start the motor and drive away. When waiting for transportation, stay close to a well-lighted area.

If bothered in any way, a call for help is the best and most appropriate way of attracting the attention of others nearby. If, in spite of everything they do, they are followed; they should turn and face their annoyer. Frequently, this direct action, showing courage and determination, will deter further trouble.

7.29. SHOWERS

Showers are potentially dangerous because the floors become wet, and slippery. Individuals should be reminded to wear rubber-soled sandals to and from the showers for
health and safety protection.

7.30. WINDOWS

Objects should never be thrown from a window. A "harmless" prank can become a dangerous hazard. Objects should not be stored on window ledges. Individuals should never climb through a window to gain access to ledges.

7.31. FIRE EXTINGUISHERS AND HOSES

This equipment is to be used in case of emergency only. They are not playthings and those persons abusing this equipment are subject to punishment if caught.
CHAPTER 8
PERSONAL PROTECTIVE EQUIPMENT

8.01. PROTECTIVE CLOTHING

Safety shoes, shin guards, hard hats, aprons, gloves, sleeves, etc. will be maintained in sanitary and reliable condition. Whenever the hazard of the processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered are such that injury or impairment in function of any part of the body may result, this equipment will be provided and used as per OSHA requirements (OSHA 3151-12R-2003)

8.01.01. Head Protection

Employees working in areas where there is a possible danger of head injury from impact, falling or flying objects, electrical shock, and/or burns will be protected by protective helmets. Helmets for the protection of employees against impact and penetration of falling and flying objects will meet the specifications contained in American National Standards Institute Z.89.1-1969 "Safety Requirements for Industrial Head Protection".

8.01.02. Eye and Face Protection

Employees will be provided with eye and face protection equipment when machines or operation present potential eye or face injury from physical, chemical, or radiation agents. Eye and face protection equipment will meet the requirements specified in American National Standards Institute Z.87.1-1968 "Practice for Occupational and Educational Eye and Face Protection". Employees whose vision requires the use of corrective lenses in spectacles, when required by this part to wear eye protection; will be protected by goggles or spectacles of one of the following types.

1. Spectacles when protective lenses provide optical correction.
2. Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.
3. Goggles that incorporate corrective lenses mounted behind the protective lenses.

Eye and face protection will be required where there is reasonable probability of injury that can be prevented by such protection. In such cases, a type of protector suitable for the work to be performed will be made conveniently available, and employees and/or
students will use such protectors. Protectors will be kept clean and in good repair. Suitable eye protection will be provided where machines and operations present the hazard of flying objects, glare, liquids, injurious radiation, or combination of these hazards. Pitted or scratched lenses reduce vision and seriously reduce protection. They will be replaced immediately.

8.01.03. Electrical Protective Devices

Devices for protection from electric shock such as insulated platforms, insulated tools, hot sticks and fuse pullers, etc. will be provided and used by all persons exposed to such hazards.

8.01.04. Ear Protective Devices

After engineering controls have been instituted, but it is not feasible to reduce the noise levels or duration of exposures to those specified in Table G-16, "Permissible Noise Exposure" in 1910.95 Occupational Safety and Health Act Standard, a hearing conservation program will be instituted. If these two controls fail to reduce the sound levels within the permissible level; then personal ear protective equipment will be provided and used. Ear protective devices inserted in the ear will be fitted or determined individually by competent persons. Plain cotton is not an acceptable protective device.

8.01.05. Emergency Apparatus and Equipment

Lifelines and belts will be provided for and used by workmen exposed to the hazard of falling. They will not be required to support loads in excess of their rated capacities. Every lifeline and safety belt will be properly stored, maintained, and periodically inspected.

8.01.06. Respiratory Protection

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, sprays, or vapors, the primary objective will be to prevent atmospheric contamination. This will be accomplished as far as feasible by accepted engineering control measures (e.g., enclosure or confinement of the operation, general and local ventilation and substitution of less toxic material). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators will be used.

Respirators, which are applicable and suitable for the purpose intended, will be provided when such equipment is necessary to protect the health of the employee. A
The employee will use the provided respiratory protection in accordance with instructions and training received. The employee will guard against damage to the respirator and report any malfunction of the respirator to the responsible person.

Respirators will be selected on the basis of hazards to which the worker is exposed. The user will be instructed and trained in the proper use of respirators and their limitations. Where practicable, the respirators should be assigned to individual workers for their exclusive use. Respirators will be regularly cleaned and disinfected. Those issued for the exclusive use of one worker will be cleaned after each day’s use, or more often if necessary. Those used by more than one worker will be thoroughly cleaned and disinfected after each use. Respirators used routinely will be inspected during cleaning.

Respirators will be stored in a convenient, clean, and sanitary location. Worn or deteriorated parts will be replaced. Respirators for emergency use such as self-contained devices will be thoroughly inspected at least once a month, and after each use. Appropriate surveillance of work area conditions and degree of employee exposure or stress will be maintained. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment.
9.01. GENERAL REQUIREMENTS

Machine guarding will be provided to protect the operator and other employees in the machining area from injury as a result of coming in contact with the work in progress, moving parts or the mechanical motions of the machines.

9.02. APPLICATION OF GUARDING TECHNIQUES

The following will apply in the application of guarding techniques.

1. **Multiple Guarding** - One or more techniques of machine guarding may be required to effectively meet appropriate requirements. A piece of equipment may require more than one basic guarding device since the machine may present more than one type of exposure. For example, power transmission guarding may be required for the belt and pulley and a barrier guard may be required for the in-running nip points of the same machine.

2. **Machine Guarding Defined** - Machine guarding for the purpose of this manual may be defined as a system that may employ a simple fixed position barrier, two-hand tripping devices, interlocks, electronic or pneumatic systems, sweep guards or any combination thereof which will effectively protect the operator and others nearby from coming in contact with mechanical motions or mechanisms of the machines.

3. **Mechanical Motions Defined** - To effectively identify all danger points of a machine that requires guarding, a basic knowledge of the resulting actions of certain mechanical motions must be understood. There is a wide variety of machinery employed in a multiplicity of uses, but there are only a few rather simple mechanical motions involved. The mechanical motions coupled with one or more mechanisms create the hazards and conditions to be guarded. Mechanisms employ rotary motions, reciprocating motions or a combination of both. Each of these motions can produce a crushing or shearing action:

   Rotary motion is found in simple rotating mechanisms which include drums, extractors, circular saws, slicing machines, cloth cutters, band saws, milling machines, grinding machines, drilling
and boring machines, screw and worm mechanisms, extruding machines, screw conveyors, and food choppers. Mechanical power transmission apparatus such as shafting, flywheels, pulleys, belts, fall under the rotating mechanisms category.

Reciprocating motion is found where sliding (i.e., reciprocating) parts, usually supported in guides, approach or cross a fixed part of a machine or stock. Reciprocating motions and mechanisms are usually found in slides (i.e., rams) on power presses and forging hammers, planing mill tables, rams of shapers, and as clamping or hold down fixtures, guillotines, and squaring shears.

9.03. HAZARDOUS MECHANISMS TO BE GUARDED

The following hazardous mechanisms are to be guarded.

1. **Rotating Mechanisms** - These mechanisms present a variety of hazards that require handling. Among the many, but limited to, are mechanical power transmission apparatus which involved the guarding of gears, shafting, flywheels, pulleys, belts, and clutches.

2. **Cutting and Shearing Mechanisms** - The hazards relating to these mechanisms lie at the point where the rotary cutting action is applied or where the reciprocating mechanism crosses a fixed object. Some examples of machines using cutting and shearing mechanisms are grinding machines, drilling and boring machines, circular saws, band saws, and lathes.

3. **In-running Nip Points** - Special hazards are created by mechanisms having one or more rotating parts. In some situations, in-running nip points require only simple fixed barrier guards (i.e., flywheels, belts, and pulleys). In other instances a complex series of barrier and inter-locking systems may be needed to effectively protect the operator or those nearby.

The hazard of in-running nip points is that it draws objects in, crushes or flattens them. Once an object (or part of body) becomes drawn into the nip point, it is difficult or impossible to withdraw it. Nip points exist wherever a part rotates in, over, under or near a stationary object or another rotating object. The nip point occurs whether or not the mechanisms are rotating in opposite directions in close proximity or at different speeds. Examples of nip points may be gear and rack, chain and sprockets, belt and pulley, gear and pinion, in-running side or rolling mills and calendars, rolls used for bending and forming, rotating drums and tumblers, rolls
used for printing, corrugating, embossing or feeding and conveying stock.

4. **Screw and Worm Mechanisms** - Machines employing worm or screw mechanisms are meat grinders, food mixers, screw conveyors and materials mixers of various types. These mechanisms set up shearing actions between the moving screw and the fixed part creating a battering or mangling action. Guarding must be provided where an exposure of an operator being caught between the action of the worm mechanism and the fixed part of the equipment exists.

5. **Bending and Forming Mechanisms** - Typical examples of bending and forming mechanisms are found on power presses, foot presses, hand presses, press brakes, metal shears, forging machines and bending presses for forming and stamping pieces of metals and other materials. The principal hazards lie at the point of operation where the punch or upper die approaches, crosses or comes in contact with the lower die.

9.04. DESCRIPTION AND TYPES OF GUARDS

The hazards involved in machinery operations can be eliminated by application of effective guarding techniques. Effective protection may require the use of a single simple fixed guard or a system of the several guards described below in some combination. Except for the treatment of guarding power transmission apparatus in the following section, the main effort is directed to machine and point of operation guarding. The three types of guards most frequently used are described as follows.

1. **Fixed (Enclosure) Guards** - The fixed guard is considered preferable to all other types of guards and should be used unless it has been determined to be impractical. As a general rule, fixed guards usually satisfy the requirements for guarding power transmission mechanisms and for confining flying particles. The fixed guard, when properly adjusted, will accommodate feeding, but will at all times prevent the operator’s hands from reaching the danger zone.

2. **Interlocking Guards and Devises** - Where fixed guards cannot be used, an interlocking guard should be used. Interlocking guards may be enclosure, barrier or gate type guards operated mechanically, electrically, pneumatically, electronically, or a combination thereof. An interlocking device should be of a design that prevents machine motion until the guard is moved into place or otherwise acting so that the operator cannot reach the danger
To be effective, an interlocking device must satisfy three requirements:

a. It must act to guard the dangerous part before the machine can be operated,
b. It must keep the guard closed until the dangerous part is at rest, and
c. It must always prevent operation of the machine if the interlocking device fails.

3. Automatic Guards - These guards may be used when either a fixed or an interlocking guard is practicable. Automatic guards function independently of the operator, and its action is usually repeated as long as the machine is in motion. Such guards are usually operated by the machine itself through a system of linkage or levers. There are many variations of this type guard: e.g., sweep guards, swing guards, pullback guards, etc.

Whenever automatic guards are used on machines loaded or unloaded by hand, the operator should be provided with and required to use hand tools.

4. Other Guarding Devices and Techniques - There are guarding devices and techniques other than those described above, which can be effectively used to complement other type guarding or, if circumstances and safety permit, used in lieu of them.

a. Two-handed operating devices may be used to activate the machine. These devices require simultaneous action of both hands of the operator on electrical switch buttons, air control valves, or mechanical levers. On presses with a non-interrupting stroke, two-handed operating devices should require manual operation until a point is reached in the cycle at which the hazard ceases. Hand controls may be interconnected with foot controls to permit operation of the machine. The actuating controls will be so located as to make it impossible for the operator to be able to move his hands from the controls to the danger zone before the machine has completed its closing cycle. The two-handed controls will be so designated as to prevent the blocking, tying down, or holding down of one control to allow one hand free access to the point of operation. When more than one person is working a machine, additional controls
should be installed and designed so that all people must simultaneously activate the starting mechanism from remote locations.

b. Automatic or semi-automatic feed and ejectable devices feed stock to the danger points by chutes, hoppers, conveyors, movable disks, dial feed rolls, etc. and automatically ejects thereby reducing the continuous exposure created by hand feeding of work or its removal. Exposed point must be guarded by an enclosure guard to prevent any part of the body from coming into the danger zone.

c. Auxiliary devices include:

1) **Feeding Tools** - A variety of special feeding tools have been developed for use in connection with automatic feeds or enclosure guards. These tools will be made of woods, soft metal, aluminum, or magnesium (some are magnetized) and include pushers, pickers, pliers, tweezers of various types, forks, and disks. Tools provide protection only if they are used by the operator. They will never be used as a substitute for proper guarding.

2) **Foot Control Guards** - Presses operated by foot pedal, treadle or foot switch will not be permitted unless the danger zone or die is guarded and the foot pedal or switch is also guarded to prevent accidental tripping.

9.05. GUARD DESIGN AND CONSTRUCTION

Every guard will be reliable in construction, application and adjustment. It will be so designed and substantially constructed as to:

1. Prevent the operator or other personnel from having any part of their body in the danger zone during the operation,

2. Facilitate inspection and lubrication and so designed to minimize the possibility of its being removed or misused,

3. Present no hazards itself, such as splinters, pinch points, shear points, sharp corners, rough edges, or other sources or injury, and
4. Contain flying fragments, missiles, or particles that may be thrown during the operation.

Openings in guards, barriers or screens at the point of operation will be small enough to prevent the operator or others from placing parts of their body into the danger zone. Open work guards can be of woven wire expanded metal, perforated metal or wood strips.

9.06. GUARDING AT THE SOURCE OF POWER

Distinct from guarding at the point of operation but complementary to it is the matter of guarding at the point where power is delivered to machinery. Devices to control delivery of power at the source include electrical switches of many kinds and numerous varieties of valves, regulators, and metering devices. The latter are used to open, shut, or otherwise control the flow and pressure of steam, pneumatic, and hydraulic media that energize machinery. These devices must be of a design that will bleed-off or relieve residual pressures in the lines, after the power has been shut off, beyond the control point so as to prevent an accidental cycle or stroke of the machine.

9.07. GUARDING OF SPECIFIC MACHINES AND MECHANISMS

The following will apply for guarding of specific machines and mechanisms.

9.07.01 Power Transmission and Related Rotating Mechanisms - General

All moving parts of equipment used in the mechanical transmission of power, located so that any part is 7 feet or less above floors and platforms, will be guarded to prevent persons from coming in contact with rotating mechanisms. These mechanisms include but are not limited to flywheels, shafting spindles, belts, pulley, gears, sprockets,cams, and coupling, keys and set screws.

All revolving collars will be cylindrical, and screws or bolts used in collars will not project beyond the largest periphery of the collar.

Shaft couplings will be so constructed as to prevent no hazards from bolts, nuts, set screws, or revolving surfaces. Bolts, nuts, and set screws will, however, be permitted where they are covered with safety sleeves or where they are used parallel with the shafting and are countersunk of else do not extend beyond the flange of the coupling.

Cranks and connecting rods when exposed to contact will be guarded.
All gears will be guarded except hand-operated gears used only to adjust machine parts and which do not continue to move after hand power is removed.

When frequent oiling must be done, openings with hinged or sliding self-closing doors will be provided. All points not readily accessible will have oil fee tubes if lubricant is to be added while machinery is in motion.

All projecting keys, set screws and other projections in revolving parts will be removed or covered. This does not apply to sprocket casings or other enclosures, nor to keys, set screws or oil cups in hubs of pulleys less than 20 inches in diameter where they are within the plane of the rim of the pulley.

9.07.02 Rotating Mechanism Machinery

The following sections do not cover power transmission guarding previously covered. Certain cutting processes generate chips, flying particles, etc. The guarding system should therefore include protection against such missiles by applicable guards or exhaust systems. Machinery using rotating mechanisms will be guarded as follows.

1. Circular Table Saws - Each circular hand-fed rip and cross-cut table saw will be guarded by a hood which will completely enclose that portion of the saw above the material being cut. The hood and mounting will be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut. Each hand-fed circular rip saw will be furnished with a spreader and non-kickback fingers or dogs. Each circular cross-cut saw should be provided with a spreader.

Each circular metal saw will be provided with a guard of not less than 1/8-inch sheet metal positioned to stop flying sparks. Suitable means should be provided to trap sparks below the saw.

Swing and sliding cut-off saws will be provided with a hood that will completely enclose the upper half of the saw, the arbor ends, and the point of operation at all positions of the saw. Its hood will be so designed that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table, the hood will rise on top of the fence; and when the saw is moved forward, the hood will drop on top of and remain in contact with the table or material being cut. Each saw will be installed in such a manner that the saw will return automatically to the back of the table when released at any point of its travel. Limit stops or other equally effective devices will be provided to prevent the saw from swinging beyond the front or back edges of the table, or beyond a forward position where the gullets of the lowest saw teeth will rise
above the table top. A latch or equivalent device should be provided to catch and retain the saw at the table and to prevent its rebounding.

2. **Radial Saws** - The upper hood will completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The sides of the lower exposed portion of the blade will be guarded to full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection for the operation being performed. When radial saws are used for ripping, a spreader should be provided and non-kickback fingers or dogs will be provided. An adjustable stop will be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut.

3. **Band Saws and Band Resaws** - All portions of the saw blade will be enclosed or guarded, except the working portion of the blade between the bottom of the guide rolls and the table. The outside periphery of the enclosure will be solid. The front and back of the band wheel will be either enclosed by solid material or wire mesh or perforated metal. The guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard will protect the saw blade at the front and outer side. This portion of the guard will be self adjusting to raise and lower with the guide. Brakes should be provided to stop the wheel in case of blade breakage. Feed rolls of band resaws will be protected with a suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point.

4. **Grinding Equipment** - Work rests will be kept adjusted closely to the abrasive wheel with a maximum opening of 1/8-inch to prevent the work from being caught between the wheel and the rest.

The work rest will be securely clamped after each adjustment.

The guard will cover the spindle end, nut, and flange protections. It will be mounted so as to maintain proper alignment with the wheel, and the strength of the guard. Where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

5. **Drum Sanding Machines** - Each machine will have an exhaust hood or other guard so arranged as to enclose the revolving drum, except for that portion of the drum above the table.
6. **Disk Sanding Machines** - Each machine will have an exhaust hood or other guard so arranged as to enclose the revolving disk, except the disk above the table.

7. **Belt Sanding Machines** - Each machine will be provided with guards at each nip point where the sanding belt runs on to a pulley. The unused run of the sanding belt will be guarded against accidental contact.

8. **Planing, Molding, Sticking, and Matching Machines** – Each machine will have all cutting heads, and saws if used, covered by a metal guard. Feed rolls will be guarded by a hood or suitable guard to prevent the hands of the operator from coming in contact with in-running rolls at any point. The guard will be fastened to the frame carrying the rolls.

9. **Jointers** - Each hand-fed jointer with a horizontal cutting head will have an automatic guard which will cover the section of the head back of the gauge or fence.

10. **Wood Shapers** - The cutting heads of each wood shaper, hand-fed panel raiser, or other similar machine not automatically fed, will be enclosed with a cage of adjustable guard so designed as to keep the operator’s hands away from the cutting edge. The diameter of the guard will be not less than the greatest diameter of the cutter.

11. **Tenoning Machine** - Each machine will have all cutting heads and saws if used, covered by metal guards. These guards will cover at least the unused part of the periphery of the cutting head.

12. **Vertical-Head Jointers** - Each machine will have either an exhaust hood or other guards so arranged as to enclose completely the revolving head, except for a slot of such width, as may be necessary and convenience for application of the material to be jointed.

13. **Shearing Machines** - All revolving blades on shearing machines will be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 3/8-inch.

14. **Rotary Cutter** - On single knife machines, a guard will be provided to prevent employees from reaching for paper at a point close to the knife. On duplex cutters the same protection will be provided as for single-knife machines for the first knife, and a hood will be provided for the second knife. A guard will be provided for the
spreader or squeeze roll at the nip side on sheet cutters. Electrically or manually operated quick power-disconnecting devices will adequate braking action will be provided on all operating sides of the machine within easy reach of all operators. The outside slitters will be guarded.

15. Turning Machinery (including lathes and similar machinery) - Each profile and swing-head lathe will have all cutting heads covered as completely as possible by hoods or shields, which should be hinged to the machines so that they can be thrown back for making adjustments.

16. Drilling, Reaming, and Boring Machines - Safety-bit chucks with no projection set screws will be used. Boring bits should be provided with a guard that will enclose all portions of the bit and chuck above the material being worked.

9.07.03. Other Rotating or Revolving Mechanisms

Additional devices using rotating or revolving mechanisms will be guarded as follows:

1. Fans - When the periphery of the blades of a fan is less than seven (7) feet above the ground, floor, or working level, the blades will be guarded. The guard will have openings no larger than one-half (1/2) inch.

2. Mixers - All mixers with power and manual dumping arrangements will be equipped with safety devices which will engage both hands of the operator while the bowl is opened more than 15% of its total opening, in keeping the agitator in motion under power.

3. Washing Machines - Each washing machine will be equipped with an interlocking device that will prevent the inside cylinder from moving when the outer door on the case of shell is open, and will also prevent the door from being opened while the inside cylinder is in motion.

9.07.04. Reciprocating Mechanisms

Included in this section are reciprocating mechanisms used in bending, forming, and shearing actions. Machinery using reciprocating mechanisms will be guarded as
follows:

1. **Power and Gravity Drop Hammers** - A scale guard of substantial construction will be provided at the back of every hammer, so arranged as to stop all flying objects. This guard may be pivoted to permit easy access to dies, supported on floor standards or suspended from the ceiling by chains with hooks at the bottom.

2. **Mechanically Operated Hammers** - Where only one hand is used or holding the material, safety stop, dog or catch should be provided that will prevent the hammer from coming down until this device has been released and is held out of the way by the other hand, or a hand lever instead of the foot treadle will be provided for tripping the hammer. On hammers where neither hand is used for holding the material, a safety stop or tripping lever, or both, should be provided that will require the use of both hands to trip the hammer.

3. **Power Presses** - Each press will be equipped and operated with a point-of-operation protection device for every press operation performed except where the point of operation is limited to an opening of 1/4-inch or less. The guard will be attached to the press or the die. The guard itself will not offer any accident hazard. It will be so designed and constructed as to facilitate inspection and to minimize the possibility of removing or misusing essential parts. The guard will be so designed and constructed as to prevent entry of an operator’s hand or fingers within the point of operation.

4. **Cutting and Trimming Machines** - Each guillotine-type cutter will be equipped with a control which requires the operator and his helper, if any, to use both hands to engage the clutch. Each will be equipped with a non-repeat device.

5. **Slicers** - The cover over the knife head of reciprocating blade slicers will be provided with an interlocking arrangement so that the machine cannot operate unless the cover is in place. On slicers with endless band knives, each motor will be equipped with a magnet brake which operates whenever the motor is not energized. Each door, panel, or other point of access to the cutting blades will be arranged by means of mechanical or electric interlocks so that the motor will be de-energized if any such access doors, panels, or access points are not closed. Where pusher fingers attached to the feed chain enter the bed of the cross feed, the end guard will be extended to cover the pinch point.

6. **Power Shears** - A positive-type lock-out device for disconnecting the power to the shear will be provided. Effective point-of-
operation guarding should be provided at both the feeding and discharge ends of the shears.

7. **Dividers** - All pinch and shear points from reciprocating or rotating parts of the divider will be enclosed or guarded. Guards at the front of a divider will be so arranged that the weight of dough can be adjusted without removing the guard. The back of the divider will have a complete cover to enclose all of the moving parts, or each individual part will be enclosed or guarded to remove the separate hazards. The rear cover will be provided with a limit switch in order that the machine cannot operate when this cover is open. There will be a saddle guard to other protective devices on any elongated hole in the knife actuating arm at the back of the divider.

8. **Sewing Machines** - Each sewing machine will be equipped with an approved guard permanently attached to the machine, so that the operator’s fingers cannot pass under the needle. It will be of such form that the needle can be conveniently threaded without removing the guard.
CHAPTER 10

HAND AND PORTABLE POWERED TOOLS AND
OTHER HAND-HELD EQUIPMENT

10.01 GENERAL REQUIREMENTS

All hand and portable powered tools and equipment whether furnished by the employee or the college will be maintained in a safe condition free of worn or defective parts. Each supervisor will be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees. Unsafe tools and equipment will not be issued or permitted to be used.

10.02. POINT OF OPERATION GUARDS

All portable powered tools capable of receiving guards and/or designed to accommodate guards will be equipped with such guards so as to prevent the operator from having any part of his/her body in the danger zone when the tool is operating.

10.03. POWER SAWS

All portable power-driven saws will be equipped with guards above and below the base plate shoe. The upper guard will cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard will cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guards will automatically and instantly return to the covering position.

10.04. POWER GRINDERS

Safety guards used on right angle or vertical portable grinders will have a minimum exposure angle of 180 degrees, and be located so as to be between the operator and wheel during use. The top half of the wheel will be enclosed at all times.

10.05. PNEUMATIC POWERED TOOLS

All pneumatic powered portable tools will be equipped with an automatic shut-off valve so arranged as to close the air inlet valve when the pressure of the operator’s hand is removed. Each tool will be equipped with a tool retainer which will prevent accidental ejection of the tool.
10.06. GROUNDING

All electrical powered portable tools with exposed non-current-carrying metal part of cord and plug connected equipment which are liable to become energized will be grounded.

10.07. POWER CUT-OFF AND PRESSURE CONTROL DEVICES

Safety procedures and features for power cut-off and pressure control devices are as follows:

1. **Electrical Tools-General** - Portable electric tools which are held in the hand will be equipped with switches of a type which must be manually held in closed position.

2. **Woodworking Tools** - Hand-held, power-driven woodworking tools will be provided with a “deadman” control, such as a spring-actuated switch, valve, or equivalent device, so that the power will be automatically shut off whenever the operator releases the control.

3. **Sandblasting Nozzles** - A deadman control or an effective signal device will be provided at the nozzle end of the blasting hose. A deadman control will provide direct cut-off at the nozzle. The signal device will be such that it will immediately signal the pot tender by means of visual and audible signals to cut off the flow in the event the blaster loses control of the hose. The pot tender will be available at all times to respond immediately to the signal.

4. **Use of Compressed Air** - Compressed air will not be used for cleaning purposes except where reduced to less than 30 psi and then only with effective chip guarding and personal protective equipment.

10.08. EXPLOSIVE-ACTUATED FASTENING TOOLS

Safety procedures and features for explosive-actuated fastening tools are as follows:

1. **Muzzle Shields** - All explosive-actuated fastening tools muzzle ends will have a protective shield or guard at least 3-1/2 inches in diameter, mounted perpendicular to and concentric with the barrel, and designed to confine any flying fragments or particles that
might otherwise create a hazard at the time of firing. Where a standard shield or guard cannot be used or where it does not cover all apparent avenues through which flying particles might escape, a special shield or guard, fixture or jig will be used as a substitute. The tool will be so designed that it cannot be fired unless it is equipped with a standard protective shield or guard, fixture, or jig.

2. **Firing Mechanism** - The explosive-actuated fastening tool’s firing mechanism will be so designed that the tool cannot fire during loading or preparation to fire, or if the tool will be dependent upon at least two separate and distinct operations of the operator, with the final firing movement being separate from the operation of bringing the tool into the firing position.

10.09. OTHER HANDTOOLS AND EQUIPMENT

Safety procedures and features for other handtools and equipment are as follows:

1. **Lifelines and Belts** - Every lifeline and safety belt will be of sufficient strength to support, before breaking, weight of 5,400 pounds. Only the best grade manila rope, or equivalent, will be used for lifelines. Lifelines, when in use, will be safely secured to strong, stable supports. Every lifeline and safety belt will be inspected before it is used.

2. **Jacks** - The operator will make sure the jack used has a rating sufficient to lift and sustain the load. The rated load will be legible and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

3. **Block and Tackle Equipment** - All blocks will fit the size of rope they carry, and will be so constructed as not to chafe the rope running through them. Where ropes are subjected to chafing suitable padding will be provided.

4. **Handtools** - Wrenches, including crescent, pipe, end and socket wrenches, will not be used when jaws are sprung to the point that slippage occurs. Impact tools, such as drift pins, wedges, and chisels, will be kept free of mushroomed heads. The wooden handles of tools will be kept free of splinters or cracks and will be kept tight in the tool.
CHAPTER 11

WELDING, CUTTING, AND BRAZING

11.01. ARC WELDING AND CUTTING

The frame or case of the welding machine (except engine driven machines) will be grounded under conditions and according to the methods prescribed in Article 630 of the National Electrical Code. All arc welding equipment will be maintained in safe working order at all times and all provisions of OSHA Part 1926 Subpart J - Welding and Cutting, shall be maintained.

11.02. RESISTANCE WELDING EQUIPMENT

All press welding machine operations will be effectively guarded by protection similar to that prescribed for power press operations. Shield guards of safety glass or fire resistant plastic will be installed at the point of operation to protect the welder and other employees from flying sparks.

11.03. FIRE PROTECTION

11.03.01. Prohibited Welding Situations

Cutting or welding will not be permitted in the following situations:

1. In sprinklered buildings while such protection is impaired,
2. In the presence of explosive atmospheres, and/or
3. In areas near the storage of quantities or readily ignitable materials.

11.03.02 Precautions Before Welding

Before cutting or welding is permitted, the area will be inspected by the individual responsible for authorizing cutting and welding operations. This individual will ensure that the following protective measures are taken.

1. Where combustible materials such as paper clippings, wood shavings, or textile fibers are on the floor, the floor will be swept clean for a radius of 35 feet. Combustible floors will be kept wet, covered with damp sand, or protected by fire-resistant shields.
Where floors have been wet down, personnel operating arc welding or cutting equipment will be protected from possible shock.

2. Wall or floor openings or cracks within 35 feet of the site will be tightly covered to prevent the passage of sparks to adjacent areas.

3. Ducts and conveyor systems that might carry sparks to distant combustibles will be suitably protected or shut down.

4. Where cutting or welding is done near walls, partitions, ceilings, or roof of combustible construction, fire resistant shields or guards will be provided to prevent ignition.

5. If welding is to be done on a metal wall, partition, ceiling, or roof, precautions will be taken to prevent ignition of combustibles on the other side due to conduction or radiation (preferably by relocating combustibles). Where combustibles are not relocated, a fire watch on the opposite side from the work will be provided.

6. Welding will not be attempted on a metal partition, wall, ceiling, or roof having a combustible covering nor walls or partitions of combustible sandwich-type panel construction.

7. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs will not be undertaken if the work is close enough to cause ignition by conduction.

8. Portable fire extinguishers, appropriate for the type of possible fire, will be concentrated at the work area. Where hose lines are available, they will be connected and ready for service.

11.03.03. Fire Watchers

Fire watchers will be required by the individual responsible for authorizing cutting and welding whenever cutting or welding is performed in locations where other than a minor fire might develop, or where any of the following conditions exist:

1. Where appreciable combustible material in building construction or contents is closer than 35 feet to the point of operation,

2. Where appreciable combustibles are more than 35 feet away but are easily ignited by sparks,
3. Where wall or floor opening within 35-foot radius expose combustible materials in adjacent areas including concealed spaces in walls or floors, and/or

4. Where combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs, and are likely to be ignited by conduction or radiation.

Fire watchers will have fire extinguishing equipment readily available and be trained in its use. They will be familiar with facilities for sounding an alarm in the event of a fire, and will watch for fire in all exposed areas. They will try to extinguish the fire first only when obviously within the capacity of the equipment available, otherwise they will sound the alarm. A fire watch will be maintained for at least a half hour after completion of cutting or welding operations to detect and extinguish possible smoldering fires.

11.03.04. Containers That Have Held Combustibles

No welding, cutting or other hot work will be performed on used drums, barrels, tanks, or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, or other materials present which when subjected to heat, might produce flammable or toxic vapors. Any pipelines or connection to the drum or vessel must be disconnected or blanked.

11.04. PERSONAL PROTECTION

11.04.01. Eye Protection

Helmets or head shields will be used during all arc welding or cutting operations. Goggles or other suitable eye protection will be used during all gas welding or cutting operations. The intense light associated with welding operations can cause serious and sometimes permanent eye damage if operators do not wear proper eye protection. The intensity of light or radiant energy produced by welding, cutting, or brazing operations varies according to a number of factors including the task producing the light, the electrode size, and the arc current (see table 1: Filter Lenses for Protection against Radiant Energy in OSHA 3151-12R-2003).

11.04.02. Welding Booths and Welding Bays

Where arc welding is regularly carried on in a building, the walls of the welding bay should be painted with a finish of low reflectivity. The worker should be enclosed in
an individual booth painted with a finish of low reflectivity or will be enclosed with non-combustible screens similarly painted. Booths and screens will permit circulation of air at floor level. Workers or others adjacent to the welding areas will be protected from the rays by non-combustible screens or shields or will be required to wear appropriate goggles.

11.04.03. Protective Clothing

All welders should wear flameproof gauntlet gloves. Flameproof aprons may be desirable as protection against radiant heat and sparks. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All clothing should be reasonably free from oil or grease. For heavy work, fire-resistant leggings, high boots, or other equivalent protection should be used.

11.05. VENTILATION - GENERAL

Mechanical ventilation will be provided (Per OSHA Part 1926.57) when welding or cutting is done:

1. In a space of less than 10,000 cubic feet per welder,
2. In a room having a ceiling height of less than 16 feet,
3. In confined spaces or where the welding space contains partitions, balconies, or other structural barriers to the extent that they significantly obstruct ventilation, and/or
4. On materials or under conditions likely to cause the release of harmful quantities of toxic air-borne contaminants. Such ventilations will be at the minimum rate of 2,000 cubic feet per minute per welder, except when local exhaust ventilation or supplied air respirators are provided.

Mechanical local exhaust ventilation may be by means of either:

1. Freely moveable hoods intended to be placed by the welder as near as practicable to the work being welded and provided and provided with a rate of air flow sufficient, or
2. A fixed enclosure with a top and not less than two sides which surround the welding or cutting operations and with a rate of air flow sufficient to maintain a velocity away from the welder of not less than 100 linear feet per minute.
11.06. CHLORINATE HYDROCARBONS - DEGREASING

Degreasing or other cleaning operations involving chlorinate hydrocarbons will be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation. In addition, trichloroethylene and perchlorethylene should be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.
CHAPTER 12
MATERIAL HANDLING AND STORAGE

12.01. GEAR AND EQUIPMENT,
GENERAL REQUIREMENTS

All material handling gear and equipment provided by the college will be inspected before each use and, when necessary, at intervals during its use, to ensure that it is safe. Any gear which is found upon such inspection to be visibly unsafe, will not be used until it is made safe.

12.01.01. Fiber Rope and Fiber Rope Slings

The eyes of the slings will be so formed or spliced as to maintain the safe working load of the sling throughout. The type of splice or end fastenings used will be a factor in determining the safe working load of the sling.

Safe working loads of manila rope and rope slings are determined by size of rope and angle of sling. For specific details see Appendix 12.01.01.A. Higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

Where synthetic fiber ropes are substituted for manila ropes of less than three (3) inches circumference, the substitute will be of equal size. In making such a substitution it will be ascertained that the inherent characteristics of the synthetic fiber are suitable for the intended service of the rope.

Ropes which show evidence of wear or deterioration will be carefully examined and will not be used if there is a question of its withstanding the rated safe work load.

12.01.02. Wire Rope and Wire Rope Slings

Details in Appendix 12.01.01.A will be used to determine the safe working loads of various sizes and classification of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables the safe working load recommended by the manufacturer for specific, identifiable products will be followed, provided that a safety factor of not less than five (5) is maintained. The eyes of the sling will be formed or spliced so as to maintain the safe working load of the sling throughout. The type of end fastenings will be a factor in determining the safe working load of the sling. Additionally:
1. Protruding ends of strands in splices and bridles will be covered or blunted,

2. Where “U” bolt wire rope clips are used to form eyes, details in Appendix 12.01.01.A will be used to determine the number and spacing of clips. The “U” bolt will be applied so that the “U” section is in contact with the dead end of the rope,

3. An eye splice made in any wire rope will have not less than three full tucks. However, this requirement will not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited,

4. Except for eye splices in the ends of wires and for endless rope slings each wire rope used in hoisting or lowering, or in pulling loads, will consist of one continuous piece without knot or splice, and

5. Eyes in wire rope bridles, slings, or pull wires will not be formed by wire rope clips or knots.

Wire rope slings will be frequently inspected and lubricated. Blocks or heavy padding should be used at corners of the load to protect the sling from sharp bending and when a multiple sling is used to lift a load, the sling will be so arranged that the stress will be equalized between the ropes. Wire rope will be inspected before each use, and will not be used as load lifting fear if, in any length of eight diameters, the total number of visible broken wires, exceeds 10 percent of the total number of wires or if the rope shows other signs of excessive wear, corrosion or defect.

12.01.03. Chains and Chain Slings

All sling chains, including end fastenings, will be given a visual inspection before being used on the job. A thorough inspection of all chains in use will be made periodically. Each chain will bear an indication of the month in which it was thoroughly inspected. Additional information is provided in Appendix 12.01.01.A.

12.01.04. Hooks and Rings

The manufacturer’s recommendations will be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which not applicable manufacturer’s recommendations are available will be tested to twice the intended safe working load before they are initially put into use. Records of the dates and results of such tests will be maintained.
12.02. INDUSTRIAL TRUCKS

12.02.01. Safety Devices

Every industrial truck or tractor except motorized hand trucks will be equipped with a warning horn, whistle, or gong, or other device that can be heard clearly above the normal industrial noises in the place of employment. Motorized hand trucks should also have a warning device if they are to be used under circumstances where there is danger to personnel.

Whenever an industrial truck operation exposes the driver, it will be equipped with overhead guards. It will be of sufficient strength to support a uniformly distributed standard static test load based upon a percent of the truck capacity rating. See U.S. Department of Labor, OSHA Safety and Health Topic for Powered Industrial Trucks (Appendix 12.02.01.A.).

At least one portable fire extinguisher approved for use on Class B and C fires will be kept in close proximity available for immediate use or will be fixed to each unit in a readily accessible position.

12.02.02. Fueling

Flammable liquids except for LP-gas powered trucks with removable Interstate Commerce Commission type cylinders and diesel powered units, industrial trucks will be refueled only at locations specifically designated for that purpose. Locations outside main buildings should be selected to minimize the chances of involving combustible material beyond the equipment being refueled in the event of a fire. Contact will be maintained between the tank fuel connection on the powered industrial truck and the refueling hose nozzle or safety can spout to prevent the accumulation of dangerous charges of static electricity.

LP-gas powered trucks should not be refueled nor stored near underground entrances, elevator shafts or any other place where LP-gas could collect in a pocket causing a potentially dangerous condition. Trucks equipped with permanently mounted LP-gas containers will be refueled outdoors.

Smoking will be prohibited in the refueling area. Engines will be stopped and the operator will be off the truck during refueling.

12.02.03. Other Safety Precautions
Battery charging installations will be located in areas designated for that purposes. Facilities will be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting the charging apparatus from damage by trucks and for adequate ventilation for dispersal of fumes from gassing batteries. A carboy tilter or siphon will be provided for handling electrolyte. Smoking will be prohibited in the charging area. Precautions will be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

Powered industrial trucks will not be used in hazardous locations as defined by the National Electrical Code as Classes I, II, and III, Division 1 or 2 unless approved for such use by a recognized testing laboratory. Signs will be posted to designate these hazardous areas.

The designated load capacity of each industrial truck will be strictly observed. No counter-weighing will be added to fork trucks to increase lifting capacity unless approved by the truck manufacturer.

12.03. TRAFFIC SURFACES IN WORK AREAS

Aisles, passageways, floors, and ramps used for vehicular traffic will be in good condition and free of obstructions (i.e., free of depression, potholes, and other defects). Aisles and passageways for one-way traffic will be not less than the width of the widest vehicle or load plus 3 feet. For two-way traffic the minimum width of aisles will be not less than twice the width of the widest vehicles or loads plus 3 feet.

Lanes for aisles and passageways will be painted on the floor, or a similar method employed to mark such areas. Black, white, or a combination of these two will be the basic colors for the designation of traffic and housekeeping markings.

12.04. UNLOADING AND STACKING MATERIALS

Bags, containers, bundles, etc., stored in tiers will be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

1. Bagged Materials - The following procedures will apply:
   a. Bags will not be piled more than ten (10) bags high except when stored in bins or enclosures built for such purposes,
   b. The bags around the outside of the piles will be placed with the mouths of the bags facing the center of the pile,
   c. The back tier, when not resting against a wall of sufficient strength to withstand the pressure, should be stepped back
one bag in every five (5) tiers, the same as the end tiers, and

d. During unpiling, the entire top of the pile will be kept level and the necessary step-backs of every five (5) bags maintained.

2. Bulk (loose) Materials - The following procedures will apply:

a. Materials dumped against walls or partitions will not be stored to a height that will endanger the stability of such walls and partitions,

b. When persons are required to work in hoppers or on high piles of loose material, they will be equipped with life lines and safety belts, and

c. In withdrawing materials, no overhanging will be permitted to exist at any time.

12.05. FIRE PROTECTION

All commodities will be stored, handled, and piled with due regard to their fire characteristics. Any commodities which may be hazardous in combination with each other will be stored so they cannot come in contact with each other. Significant quantities of commodities with fire hazards greater than ordinary combustibles will be separated from the main bulk of storage by fire walls having a fire resistance of at least one hour. Adequate clearance will be maintained around lights and heating units to prevent ignition of combustible commodities. Clearance of at least 36 inches will be maintained between sprinkler deflectors and top of storage to reduce possibility of obstruction to the distribution of water. Commodities will not be stored within 36 inches of a fire door opening.

12.06. OUTDOOR STORAGE

Buildings will not be less than 15 feet from open yard piling unless the buildings have blank exterior masonry walls. Buildings of wood frame construction or containing hazardous operations should be at least 50 feet from the nearest storage pile. The entire storage site will be kept free from accumulations of unnecessary combustible materials. Weeds and grass will be kept down and a regular procedure provided for the periodic cleanup of the entire area. Storage areas will be kept free from accumulations of materials that constitute hazards from tripping or pest harborage. Proper drainage will be provided
and clearance signs to warn of clearance limits will be posted.

12.07. VAULTS

The door locking mechanisms on vaults and file rooms will be of type enabling a person accidentally locked inside to open the door from the inside.
CHAPTER 13
LABORATORY SAFETY

13.01. WORKING ALONE

No one will be permitted to work alone in a laboratory, especially after normal work hours, on weekends, or on holidays. Students always will be accompanied by an appropriate qualified individual.

13.02. PROPER HANDLING OF GLASSWARE

Glass breakage is a common cause of injury producing accidents in laboratories. Only glass in good condition should be used. Pieces with chips and cracks will be discarded. When using glass tubing, all ends should be fire polished. Tubing should be lubricated with glycerin or water before inserting into rubber stopper or rubber tubing. Hands should be protected with glove or towel when inserting the glass tubing.

13.03. SAFE STORAGE OF GASES AND LIQUIDS

All flammable liquids used in laboratories should be stored in approved safety cans. For those liquids not stored in safety cans, fire resistant, properly ventilated storage will be provided.

Refrigerators and coolers used for storage of flammable liquids will be used only if they are approved explosion proof. Refrigerators which are not explosion proof will contain a sign stating “Not for Flammable Solvents”. Commercial refrigerators can be made explosion proof by removing or locating and controlling all six possible sources of ignition. This solution is not considered satisfactory for storage of all types of flammable liquids. For laboratories considering purchasing new refrigerators or freezers, Underwriter Laboratories have approved several such appliances for the storage of flammable liquids.

All containers will be clearly labeled, special chemicals and gases will be dated and their owner identified so that disposal, if necessary, can be made safely. Quantities of gases and flammable liquids in any laboratory should be strictly controlled.

13.04. CONTROL OF SOURCES OF IGNITION

Explosion proof electrical equipment will be provided in all areas where flammable vapors are present or could be produced. Non-explosion proof plugs, switches, motors, and electrical contact will be removed from areas which are subject to flammable
vapors.

13.05. VENTILATION

Proper ventilation is most important in controlling dissipation concentrates of flammable liquid vapors. Laboratory ventilation hoods should be of adequate size and in proper operating condition. Approved respirators will be provided and used in areas where ventilation is insufficient to dissipate the toxic flammable vapors.

13.06. WASTE DISPOSAL

Waste materials should be temporarily stored only in approved waste containers or laboratory disposal cans. Flammable liquids will be kept out of laboratory sinks. Water solutions of certain liquids are flammable over a very wide concentration range.

13.07. SAFETY APPAREL

Laboratory operations which introduce potential hazards to the well being of personnel will not commence until all personnel concerned are wearing the appropriate safety apparel. Safety gloves, shoes, glasses, eye shields, aprons, and respirators are examples of safety apparel available. The Safety Administrators are prepared to offer assistance and advice in determining the proper apparel needed for a particular operation.

13.08. SAFETY SHOWERS AND EYE WASH FOUNTAINS

Where the eyes or body of any person may be exposed to any injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within the work area for immediate emergency use.

13.09. LABORATORY ANIMALS

Animal bites on hands are the source of significant laboratory accidents which require medical attention. Gloves should be worn when handling laboratory animals such as dogs, cats, mice, rats, snakes, and spiders.

13.10. LABORATORY SAFETY INSTRUCTION

At appropriate times in the academic year and during the beginning of a course of instruction, the instructor is to advise his/her students of the requirements for safety apparel and accessories, the particular hazards that may be encountered, and rules and
procedures to prevent or minimize the hazards. Fire and accident first aid procedures, to include location and use of fire extinguishers and safety shower, should be reviewed.

13.11. LABORATORY SAFETY MEASURES

Laboratory safety measures, in addition to those outlined previously, which should be practiced by all individuals using laboratories, include the following:

1. Only authorized persons should be allowed in laboratory rooms,
2. Rooms with expensive equipment should be kept locked whenever possible,
3. A strict “no smoking” rule must be followed,
4. Know where the various pieces of fighting equipment are located and how to use them,
5. Ether, acetone, and other flammable liquids should be kept only in approved containers and then only in quantities required for current work. If necessary to store in a refrigerator, be sure it is explosion proof,
6. Always return flammable liquids to their proper storage places,
7. Learn the proper methods for disposal of the various substances used. Some may be neutralized and poured in the sink drain while others, such as some flammable liquids, will require collection in special containers for removal,
8. Always work with volatile liquids or materials, whether toxic or flammable, under an exhaust hood,
9. Turn on exhaust hood and other ventilating fans before starting work with toxic or flammable materials,
10. Gas cylinders must be on ring stands or otherwise secured in place,
11. Chemicals that react together should be separated in the storage area,
12. Always pour acid into water for dilution--never water into acid,
13. Pour strong acids or alkalis slowly down the side of the receiving container to prevent splashing,

14. Smell chemicals only when necessary and then by wafting a small amount of vapor by a hand motion toward the nose,

15. Pipetting liquids by mouth suction is prohibited. If anyone should splash a strong chemical into his/her eyes, or spill it on his/her body, he/she should wash the exposed area immediately with lots of water and report to the Health Clinic as soon as possible,

16. All laboratory materials should be plainly labeled,

17. Report any unlabeled items so that they can be disposed of properly,

18. Label a container before filling. Never use a container for material other than that called for on the label,

19. Check all glassware and apparatus for cracks or chips before using,

20. Hold the glass in a towel or use gloves. Never press glass toward the palm of the hand,

21. Empty and rinse glassware before setting it aside for cleaning,

22. Broken glass on the floor or work counter should be swept up and the area wiped clean of particles or slivers with a damp paper towel, and

23. Chipped, cracked, or broken glassware should be disposed of in a special receptacle, not in a wastebasket with paper, etc.
CHAPTER 14

MOTOR VEHICLE OPERATIONS

14.01. GENERAL

Use of motor vehicles and other forms of transportation in performance of college duties will be in accordance with the requirements contained in the college’s Staff Policies and Procedures Manual, Section 07:00:00 “Travel Policy”, and TBR Policy 04:03:03:00, General Travel (See Appendix 14.01.01.A.). All drivers of college-owned vehicles must be employees of the State of Tennessee. As representatives of the college, each driver should extend every courtesy to both pedestrians and traffic.

14.02. IN CASE OF AN ACCIDENT

Medical aid for the injured should be obtained and appropriate measures taken to provide protection against further injury and/or property damage. The local police should be called for an investigation of the accident before the vehicles are allowed to move. Under no circumstances should liability be admitted for the accident; however, the other party involved should be given any information that he/she desires. The operator should identify other persons including witnesses and record details of the accident including extent of injury or property damage and how the accident occurred. Also, the operator should contact his/her supervisor immediately after any accident giving details. All information is to be submitted to the Business Office as soon as possible after return to the campus. In case of injury or fatality, the Business Office is to be notified immediately.

14.03. OTHER REQUIREMENTS

Only those employees who are paid by the State of Tennessee and who possess a valid drivers license will operate college-owned vehicles. Drivers must obey all city, county, and state motor vehicle laws that apply to them. Smoking is not permitted inside any college-owned vehicle.

A driver will not permit unauthorized persons to drive, operate, or ride in or on a college vehicle. Seat belts provided must be used. Passengers will not stand in moving vehicles. Drivers will not permit anyone to ride anywhere except on the seats or inside the body walls. Drivers will not ride on loose materials or equipment carried on trucks. Employees will not jump on or from a vehicle in motion.

Ignition systems will be turned off and smoking will not be permitted during refueling.
14.04. INSPECTION

Windshields and windows will be kept clear of items that may obstruct the vision of the operator. Brakes will be tested by the driver at the start of each day or trip. No vehicle will be operated if the brakes do not work properly. No vehicle will be operated at night unless all headlights, taillights, and other necessary safety devices required by law work properly.

Needed minor repairs should be noted on the card in the packet that accompanies each vehicle. On apparent major repairs, the Office of Plant Operations should be notified directly as soon as possible.

14.05. OPERATION

Drivers will constantly keep a lookout for pedestrians and cyclists while in the campus area and yield the right-of-way at all properly marked pedestrian crossings. Drivers following other vehicles will stay a safe distance behind so that they can stop in the clear distance ahead. Drivers will clearly signal their intentions to pass, turn, or stop.

Operators will not leave the motor running when the vehicle is abandoned. When parked on an incline, drivers will properly apply the brakes, place the vehicle in park and where possible, turn the wheels at an angle against the curb.

Trucks will not be operated with tailgates hanging or dangling. Trailers, while being towed, will be securely coupled to the vehicle, and also joined by auxiliary chains or cables. Safety chains will be of sufficient strength and so attached as to safely control the load in case the coupling device fails.

14.06. LOADING AND HAULING

Materials and equipment will be loaded so that they will not cause a hazard by shifting. Heavy equipment and materials will be securely fastened. Red flags during the day and red lights at night will be attached to equipment or material that extends more than four (4) feet beyond the back of the vehicle or two (2) feet beyond the front of the vehicle.

14.07. FUEL

Under normal circumstances, while in the State of Tennessee, all gasoline shall be secured at a Fuelman location. See list of Fuelman locations in the glove compartment of the vehicle.
These Fuelman locations should be used, except in emergencies, since the payment of tax on gasoline is not required when obtained this way. On all purchases, a copy of the ticket must be placed in the packet that is supplied with each vehicle. The license number, together with the name of the person making the purchase, must be on the ticket. Appropriate justification for the emergency purchase also must be submitted.
CHAPTER 15
GENERAL ENVIRONMENTAL REQUIREMENTS

15.01. PERSONAL SERVICE ROOMS

Toilet facilities separate for each sex and so identified, will be provided within 200 feet of all locations at which workers are regularly employed. Toilet facilities so located that employees must use more than one floor-to-floor flight of stairs (i.e., or elevator, etc.) are not considered as meeting this requirement. Water closets will be provided for each sex according to applicable standards and basic regulatory requirements found in section 01411-1 of Part 3 (Bidding Documents) of the Tennessee Board of Regents Office of Facilities Management Designer’s Manual (see Appendix 15.01.01.A.); and Chapter 0780-2-18, Tennessee Equitable Restroom Act Rules and Regulations (Appendix 15.01.01.B.).

Toilet facilities must be in separate rooms for each sex, and must be so identified.

An adequate supply of toilet paper with holder will be provided for every water closet. Covered receptacles or other approved method of disposal will be kept in all toilet rooms used by women. Washing facilities will be provided in every toilet room or be adjacent thereto.

Each toilet facility (closet) will occupy a separate compartment equipped with a self-closing door, latch, and clothes-hanger (hook). The walls of compartments may be less than the height of room walls, but the top will be not less than six feet from the floor. The minimum floor space allotted for water closets, lavatories, and urinals should be per applicable codes (see Appendix 15.01.01.A), but not less than the following:

<table>
<thead>
<tr>
<th></th>
<th>Width</th>
<th>Depth</th>
<th>Floor Space Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Closets</td>
<td>32 in.</td>
<td>42 in.</td>
<td>12 sq. ft.</td>
</tr>
<tr>
<td>Lavatories</td>
<td>24 in.</td>
<td>42 in.</td>
<td>12 sq. ft.</td>
</tr>
<tr>
<td>Urinals</td>
<td>24 in.</td>
<td>42 in.</td>
<td>12 sq. ft.</td>
</tr>
</tbody>
</table>

Proper ventilation will be afforded by an opening to the outside or by approved mechanical ventilation for mechanical ventilation. Toilet rooms will be provided with a minimum ventilation rate of 2 cubic feet of air (per minute) per square foot of floor area, per the 1999 Standard Building Code.
The toilet rooms and fixtures will be cleaned both inside and outside daily. However, toilet rooms having heavy use may need frequent attention during the day.

15.02. CHANGE ROOMS

Separate change or dressing rooms equipped with individual clothes facilities will be provided for each sex wherever it is the practice to change from street clothes or wherever it is necessary to change because the work performed involves exposure to excessive dirt, heat, fumes, vapor moisture, etc. Where employee work clothes are exposed to contamination, facilities should be provided in change rooms so that street and work clothes will not be stored in contact with each other.

15.03. WASHING FACILITIES

Washing facilities for maintaining personal cleanliness will be provided in every place of employment. They will be located as provided in the above section pertaining to toilet facilities. At least one lavatory with adequate hot and cold water, preferably from a combination supply fixture, will be provided for every 10 employees or portion thereof, up to 100 persons; and over 100 persons—one lavatory for each additional 15 persons or portion thereof. Also, at least one lavatory for each 100 students will be provided. Individual hand towels of cloth or paper will be provided together with a sanitary means for disposal. Other approved drying apparatus may be substituted for towels. The use of a common towel is prohibited.

All lavatories will be supplied with soap. Liquid or powdered soap must be in dispensers. Dispensers will be cleaned and serviced daily.

The lavatories must be cleaned and serviced daily. Those getting heavy use will need attention more often.

The locker room and showers must be clean, odor free, and well ventilated. All equipment must be cleaned regularly. Showers must be provided with recessed soap holders and hot and cold running water.

15.04. LUNCH ROOMS AND FACILITIES

In all places of employment where employees are permitted to lunch on the premises, a suitable space conforming to the following requirements will be provided for the maximum number of employees who may use such space at one time. The following number of square feet per person will be required:

<table>
<thead>
<tr>
<th>Numbers of Persons</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>73</td>
<td>- 73 -</td>
</tr>
</tbody>
</table>
Such space will be physically separated from any location where there is exposure to toxic materials or hazardous operations. No food will be stored or eaten in any toilet room or any area where there is an exposure to injurious dusts or other toxic materials.

15.05. FOOD HANDLING

All food service facilities, owned or operated by Walters State Community College for students and staff, or operated by an officially recognized college group of students or staff, will be constructed, maintained, and operated in accordance with the requirements of the current Food Service Sanitation Ordinance and Code of United States Department of Health, Education, and Welfare, Public Health Service, and the Tennessee Department of Conservation Food Law and Regulations. Vendors to the campus will comply with the current Sanitation Ordinance and Code covering the Vending of Food and Beverages, United States Department of Health, Education, and Welfare, Public Health Service or other rules and regulations that may be adopted by the Tennessee Department of Public Health.

All food will be from sources approved or considered satisfactory by the health authority, and will be clean, wholesome, free from spoilage, free from adulteration and misbranding and safe for human consumption. All food while being stored, prepared, displayed, served, or sold, or during transportation, will be protected from contamination. All perishable food will be stored at such temperatures as will protect against spoilage. All potentially hazardous food will be maintained at safe temperatures (45° F. or below, or 140° F. or above) except during necessary periods of preparation and service. All milk and milk products served to college students and staff in food service facilities will be produced, processed, and distributed in accordance with the standards for Grade A Pasteurized Milk specified in the United States Public Health Service Standard Milk Ordinance and Code, the Tennessee Dairy Law.

All eating and drinking utensils will be thoroughly cleaned and sanitized after each usage. Locations that do not have adequate and effective facilities for cleaning and sanitizing utensils, will use only single service articles as appropriate.

When vending machines are used, all food will be stored or packaged in clean, protective containers and will be handled, transported and vended in a sanitary manner. The machine location will be such as to minimize the potential for contamination of the
food, will be well lighted, easily cleanable, and will be kept clean.

15.06. WATER SUPPLY

Potable water will conform to the latest revision of the Public Health Service Drinking Water Standards. An adequate supply of potable water will be provided for drinking, sanitary and cooking purposes. The water supply for every building must come from a system or source approved by the Tennessee Department of Public Health. Approved vacuum breakers will be installed on all hose bibs, such as slop sinks, laboratory facilities, irrigation faucets, lawn sprinklers, etc. The flow of water from the drinking fountain must be from a free jet projected at an angle from the vertical. The nozzles orifice from which the water is delivered must be protected so as to not come in contact with the user’s mouth. Water coolers directly connected to the water supply piping must deliver the water to the drinking outlets under pressure with no possibility of contamination. Traps in the waste line in the interior of the cooler are prohibited.

Drinking water should be located as provided for in section above pertaining to toilet facilities. Also, at least one approved drinking fountain will be provided for each 200 students in classroom facilities. Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, will not be allowed.

Under certain conditions where the work area is large and the number of employees relatively small, this requirement may be met by the use of approved portable containers. The containers will be kept sanitary and in good repair.

The common drinking cup is prohibited. Where single service cups (i.e., to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups will be provided.

Where ice is used, it will be clean and sanitary.

Outlets for non-potable water will be posted to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes, nor will it be used for such purposes as washing of the premises. Construction of these outlets will be such as to prevent backflow of contaminated water into a potable water system. There will be no cross-connection, open or potential, between a potable and non-potable water supply.

15.07. HOUSEKEEPING

All places of employment, passageways, storerooms, and service rooms will be kept clean or orderly and in a sanitary condition. Cleaning and sweeping will be done in such a manner as to minimize the contamination of the air with dust and, so far as is
practicable, will be done outside working hours.

15.08. RODENT, INSECT, AND VERMIN CONTROL

Every enclosed workplace, classroom, lab, personal service room, etc. will be constructed, equipped, and maintained in such a manner as to prevent the entrance or harborage of rodents, insects, and vermin of any kind. Periodic preventative measures (e.g., spraying) will be taken to discourage the presence of rodents, insects, and vermin of any kind in college facilities.

15.09. SURROUNDINGS

The entire college property will be clean and free of refuse and other materials that may present safety or health hazards. Sidewalks will be adequate, safe, and convenient, and kept free of ice and snow.

15.10. LABORATORY EQUIPMENT AND FIXTURES

Laboratory benches, work tables, stools, etc. will be in good repair so as to be safe to the user and will be clean. Laboratory exhaust hoods will comply with applicable sections of the National Fire Protection Association Code. Laboratory sinks and lavatories will be thoroughly cleaned periodically, and will be maintained clean at all times.

15.11. WASTE DISPOSAL

15.11.01. Sewage

Drainage from the following plumbing fixtures must be connected to the sanitary sewer if available:

Toilets  Drinking Fountains
Urinals  Floor Drains
Lavatories  Shower Baths
Slop Sinks  Laboratories
Kitchen Sinks  Laundry Equipment
Garbage Grinders
and Dishwashers

Refuse receptacles used at any outlet where liquid wastes can be generated will be connected to the public sewer system for sanitary disposal of the liquid waste if possible.

15.11.02. Refuse

All refuse must be stored in tightly covered receptacles. Refuse receptacles adequate for storage of waste materials will be stored in a location convenient to the place where the refuse is to be collected.

Receptacles used for putrescible solid or liquid waste or refuse will be so constructed that it does not leak and it will be maintained in a sanitary condition. All sweepings, solid or liquid wastes, refuse and garbage will be removed on a regular and periodic basis and so as to avoid creating a nuisance or menace.

Receptacles will be cleaned with a volume of water under sufficient pressure to remove all waste particles from the receptacles. The receptacles will then be properly sanitized prior to its being returned to original location. Wastebaskets and waste containers must be constructed of easily cleanable, fire resistant type materials and will be kept in a clean condition.

15.11.03. Infectious Animal Wastes

The following procedure will be used in disposal of infectious and animal wastes:

All infectious waste will be incinerated in an approved incinerator or rendered non-infectious and taken to the Sanitary Landfill. While animals are waiting to be rendered non-infectious, they will be refrigerated at 35° F. to 40° F. until time of treatment and ultimate disposal.

15.12. BIRD AND ANIMAL RESTRICTIONS

Birds and animals must be controlled on the campus due to:

1. The possibility of attacks on citizenry, or
2. The unsanitary conditions created by birds and animals in campus buildings.
It is expected that faculty, staff, and students will abide by the following local and state regulations:

1. No dogs, birds, or other animals are allowed in any residential, office, or academic building of the college.

2. Any animal on the campus will be on a leash at all times and must be properly vaccinated.

3. No live birds or animals will be allowed in any area used for the conduct of food service operations.

The only exceptions to the above policy are:

1. Guide dogs accompanying blind persons, or

2. Experimental animals in laboratories or designated areas approved for animals.

15.13. OCCUPATIONAL NOISE EXPOSURE

In areas where noise levels are above the prescribed permissible levels (i.e., 90 DBA), engineering and/or administrative controls will be employed to reduce the sound levels to within prescribed levels. Where such controls are not feasible, personal protective equipment will be provided and used.

15.14. GASES, VAPORS, FUMES, DUSTS, AND MISTS

Where employees are exposed to harmful concentrations of gases, fumes, vapor, dust, and mist such as those liberated or generated by processes such as welding, heating, cutting, plating, degreasing, etc., precautions will be taken to reduce the exposure to acceptable levels. Such precautions may include a properly designed and installed ventilation system, personal protective equipment, or rotation of personnel to minimize individual exposure. Where contaminant concentrations are flammable, approved explosion proof equipment will be used. This equipment will meet the requirements of the National Electric Code.

15.15. VENTILATION - GENERAL AND COMFORT

The general atmosphere in all workrooms occupied by workers will be ventilated, by natural or mechanical ventilation, or a combination thereof, to ensure a comfortable general work atmosphere. Ventilation requirements for dangerous atmospheres,
materials, or processes will be found in appropriate sections of this handbook.

The amount of ventilation provided will be in accordance with the 1999 Southern Building Code. Provisions should be made for the entrance of clean, tempered air into the building to replace air removed by exhaust systems. The volume flow of such make-up air should be equal to or greater than the exhaust rate. Inlets should be arranged and located so that workers are not subjected to drafts of air having a temperature of more than 10°F below room temperature. The intake for the air supply will be so located as to prevent, insofar as possible, the intake of contaminants from exhaust systems, process vents, or other sources. Where artificial ventilation is necessary for the maintenance of comfortable working conditions, ventilation systems will be installed.

15.16. ILLUMINATION

15.16.01. General Requirements

Good illumination will be provided in all walking, working, and service areas and for all difficult seeing tasks to ensure the safety of the employee in or at his/her working environment. Many factors and considerations are involved in making precise evaluations of good illumination. Observation, therefore, for the purpose of determining general compliance, will be predicated upon:

1. The quality, which pertains to the distribution of brightness in a visual environment and includes the color of light, its direction, degree of glare, diffusion, etc., and

2. The quantity which pertains to the amount of illumination that produces brightness of the task and surroundings.

Good quality, of lighting free of excessive glare, brightness, etc., will be provided. There will be good direction and uniform distribution of illumination. Checking for general quality requirements can usually be done by visual observation and without need of instrumentation.

There will be a sufficient quantity of illumination in all working places. Determination as to the adequacy or quantity of illumination will be made by use of a light meter. The recommended quantity of light should be provided at the point and in the plane at which the seeing task is performed, be it horizontal, vertical, or at some intermediate angle.

The type of luminaries spacing and arrangement can be complex and dependent upon a variety of environmental factors and industrial tasks. Details and technical
information of this type must be obtained from the Illuminating Engineering Society of North America (IESNA).

Because of the several hundred different seeing tasks with prescribed levels of illumination, the Illuminating Engineering Society of North America (IESNA) will be used as the reference for the recommended levels of illumination not covered below.

Lighting for general areas where there are not specific seeing tasks at hand will be of a type which produces a uniform distribution of illumination throughout the area involved. The recommended level of illumination is usually measured on a horizontal plane 30 to 36 inches above the floor.

The locations of machinery, assembly lines, and inspection areas require the use of higher than the general levels of illumination for the seeing tasks at hand. The Illuminating Engineering Society of North America (IESNA), will be used as the reference for the recommended levels of illumination required.

Where the required amount for difficult seeing tasks or quality of lighting cannot be obtained by general lighting methods, supplementary lighting will be provided. Because of the complexities involved and the permissible combinations of lighting techniques to achieve desired levels of supplementary lighting, reference should be made to IESNA for specific requirements. The following requirements will be met in all instances.

1. Supplementary luminaries should be permanently mounted in a location to produce the best lighting efforts.

2. The luminaries must be mechanically and electrically rugged to withstand round handling.

3. Lamps should be guarded and of a type to withstand this service.

4. Guards of other means should protect the user from excessive heat.

5. All possible precautions should be taken to prevent electrical shock to the user.

Where types of safety glass that materially reduce the light reaching the eye are worn, the level of illumination should be increased in accordance with absorption of the glasses in use.

The illumination levels for permanently established locations and areas will be per Illuminating Engineering Society of North America (IESNA) standards, or as follows:
<table>
<thead>
<tr>
<th>Service Spaces</th>
<th>Foot Candles on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stairways</td>
<td>20</td>
</tr>
<tr>
<td>Elevators, Freight, and Passenger</td>
<td>20</td>
</tr>
<tr>
<td>Corridor</td>
<td>20</td>
</tr>
<tr>
<td>Toilet and Washrooms</td>
<td>20</td>
</tr>
<tr>
<td>Locker Rooms</td>
<td>20</td>
</tr>
<tr>
<td>Storage Rooms and Warehouses</td>
<td></td>
</tr>
<tr>
<td>Inactive</td>
<td>6</td>
</tr>
<tr>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>Rough bulky</td>
<td>10</td>
</tr>
<tr>
<td>Medium</td>
<td>20</td>
</tr>
<tr>
<td>Fine</td>
<td>50</td>
</tr>
<tr>
<td>Storage Yards</td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>20</td>
</tr>
<tr>
<td>Inactive</td>
<td>1</td>
</tr>
</tbody>
</table>

Levels of illumination will be checked periodically. When levels decrease to below designed or required levels, necessary maintenance steps will be taken to bring the level back up to requirements.

Means will be provided for easy access to all luminaries.

15.16.02. Lighting for Offices and Adjacent Spaces

Systems for office lighting should be designed to provide satisfactory uniformity of illumination to permit flexible arrangement of office operations and equipment and to help assure more uniform brightness throughout the office area. Uniformity of illumination is considered satisfactory if the minimum value is two-thirds or more of the maximum value.

It is recommended that the amount of light in hallways be no less than 20% of that in adjacent areas. The illumination values recommended for hallways should be provided at floor levels.

Personal service spaces may be provided with supplementary lighting.
15.16.03. Temporary Lighting

Where temporary lighting is used in lieu of fixed systems, all means of access and walkways leading to work areas as well as work areas themselves will be adequately illuminated. All temporary lights will meet the requirements listed below.

Temporary lights will be equipped with guards to prevent accidental contact with the bulb, except the guards are not required when the construction of the reflector is such that the bulb is deeply recessed. Temporary lighting stringer or streamer will be so arranged as to avoid over-loading of branch circuits.

Employees will not be permitted to enter dark spaces without suitable portable light. The use of matches and open flame lights is prohibited.
CHAPTER 16

ELECTRICAL WIRING, APPARATUS, AND EQUIPMENT

16.01. GENERAL CONFORMANCE

Electrical utilization equipment will be installed and maintained in conformity with these safety rules. Reference is made to other related safety codes approved by the American National Standards Institute (ANSI), and particularly to the National Electrical Code (NEC) and the National Fire Protection Association (NFPA).

16.02. GENERAL SAFETY

Circuits should be de-energized before any work on them is attempted and they should be grounded to prevent backfeed. Switches should be grounded to prevent backfeed. Switches should be open and locked out and equipment or circuit proof-tested for de-energization before work proceeds. The lock should be removed by the person who installed it.

16.03. WARNING SIGNS

The voltage and intended use of electrical wiring apparatus and equipment will be shown by standard signs wherever it will reduce the hazard or decrease the liability of error in operating.

16.04 THE NATIONAL ELECTRIC CODE (NEC)

The National Electrical Code (NEC) is organized into 12 components.

1. Chapters (major categories);

   a. Each of the nine chapters contains articles. The nine chapters fall into four groupings:

      1). Chapters 1 through 4 Specific Rules (Hazardous locations, signs, control wiring);

      2). Chapters 5 through 7 Communication Systems (Telephone, Radio/Television, and Cable TV Systems);

      3). Chapter 8 Tables; and
2. Articles (individual subjects);
   a. The NEC contains about 125 articles. An article covers a specific subject as in the following examples:
      1). Article 110-General Requirements,
      2). Article 250-Grounding,
      3). Article 300-Wiring Methods,
      4). Article 430-Motors,
      5). Article 500-Hazardous (classified) Locations,
      6). Article 680-Swimming Pools,
      7). Article 725-Control Wiring, and
      8). Article 800-Communication Wiring.

3. Parts (divisions of an article);
   a. When an Article is sufficiently large, the Article is subdivided into Parts.

4. Sections, lists, and tables (Code rules);
   a. Each actual Code rule is called a section and is identified with numbers, such as Section 225-26, and
   b. A Code section may be broken down into subsections by letters in parentheses, and numbers in parentheses may further break down each subsection.

5. Exceptions (Code rules);
   a. Exceptions are italicized and provide an alternative to a specific rule. The two types of exceptions are mandatory and permissive.
      1). A mandatory exception uses the words "shall" or "shall not." The word "shall" in an exception means
that if you are using the exception, you are required
to do it in a particular way. The term "shall not"
means that you cannot do something.

2). A permissive exception uses such words as "shall
be permitted," which means that it is accepted to do
it in this way.

6. Fine Print Notes (explanatory material, not mandatory Code
language);
   a. A Fine Print Note contains explanatory material intended to
      clarify a rule or give assistance, but it is not Code
      requirement.

7. Definitions (Code rules);

8. Superscript Letter X;
   a. Superscript letter X indicates that the material was
      extracted from other technical standards published by the
      NFPA.

9. Marginal Notations, Code changes () and deletions;

10. Table of Contents;

11. Index; and

12. Appendices.
   a. The four appendices in the NEC are:
      1). Appendix A-Extract Information
      2). Appendix B- Ampacity Engineering Supervision
      3). Appendix C-Conduit and Tubing Fill Tables; and

16.05. ELECTRICAL GROUNDING

The resistance to earth should be maintained as low as can be realized
economically. A resistance of 1 ohm or less is desirable. All interior wiring systems will
have a grounded conductor which is continuously identified throughout the system.

1. **Portable Appliances** - Exposed non-current carrying metal parts of cord and plug connected equipment and appliances will be grounded.

2. **Fixed Equipment** - Exposed non-current carrying metal parts of fixed equipment which are liable to become energized will be grounded.

### 16.06. FIXED WIRING AND INSTALLATION

Guarding of live parts, not more than 600 volts will be completed as follows.

1. **Guarding** - Live parts of electrical equipment operating at 50 volts or more will be guarded against accidental contact by approved cabinets or other forms of approved enclosures, or any of the following means:

   a. By location in a room, vault, or similar enclosure which is accessible only to qualified persons,

   b. By suitable permanent, substantial partitions or screens, so arranged that only qualified persons will have access to the space within reach of the live parts,

   c. By a standard guardrail, provided the location is such as to make contact with live parts unlikely,

   d. By location on a suitable balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons,

   e. By elevation at least 8 feet above the floor or other working surface,

   f. In locations where electrical equipment would be exposed to physical damage, enclosures of guards will be so arranged and of such strength as to prevent such damage,

   g. Entrances to rooms and other guarded locations containing exposed live parts will be marked with conspicuous standard warning signs forbidding unqualified persons to enter, and/or
h. Where current-carrying parts of more than 150 volts to ground must necessarily be exposed (unguarded) within 8 feet from the floor, all surrounding conducting floors and other conducting surfaces within reach will be covered with suitable insulating platforms, mats, or other insulating devices.

2. Overcurrent Protection - Equipment and conductors will be protected against overcurrent as specified in the National Electrical Code. Devices intended to break current will have an interrupting capacity sufficient for the voltage employed and for the current which must be interrupted. Overcurrent devices will be located at the point where the conductor to be protected receives its supply. Overcurrent devices will be enclosed in cutout boxes or cabinets, unless a part of a specially approved assembly which affords equivalent protection, or unless mounted on switchboards, panelboards, or controllers located in rooms or enclosures free from easily ignitable material and dampness. Overcurrent devices will be so located or shielded that persons will not be burned or otherwise injured by their operation.

3. Mounting and Installation - Electrical equipment will be installed in a neat manner and it will be firmly secured to the surface on which it is mounted. Wooden plugs driven into holes in masonry, concrete, plaster, or similar materials will not be depended on for security.

4. Deteriorating Agencies - Unless approved for the purpose, no conductors or equipment will be located in damp or wet locations; where exposed to gases, fumes, vapors, liquids, or other agents having a deteriorating effect on the conductors or equipment; nor where exposed to excessive temperatures. When wiring is subject to physical damage, conductors will be of such strength as to prevent damage.

5. Working Space - Sufficient access and working space will be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment. Working space will not be used for storage.

6. Splices - Conductors will be spliced or joined with splicing devices approved for the use or by brazing, welding, or soldering. Splices will first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices and joints and the free ends of conductors will be covered with an
insulation equivalent to that of the conductors.

7. Boxes - In completed installations each outlet box will be provided with a cover. Openings through which conductors enter will be adequately closed. Unused openings in boxes and fittings will be effectively closed to afford protection substantially equivalent to that of the wall of the box or fitting. Boxes will be securely and rigidly fastened to the surface upon which they are mounted.

8. Arcing Parts - Parts of electrical equipment which in ordinary operation produce arcs, sparks, flames, or molten metal will be enclosed unless separated and isolated from all combustible materials.

9. Insulation Resistance - All wiring will be so installed that when completed the system will be free from short-circuits and from grounds other than as provided in Article 250 of the National Electrical Code.

10. Identification - Each disconnecting means required by the National Electrical Code for motors and appliances and each service feeder or branch circuit at the point where it originates, will be legibly marked to indicate its purpose unless located and arranged so the purpose is evident. Attachment plugs and connectors will be so designed that they will not fit into a receptacle other than the correct rating.

11. Ducts and Air Handling Spaces - No wiring systems of any type will be installed in ducts used to transport dusts, loose stock, flammable vapors, nor will any wiring system of any type be installed in any duct, or shaft containing only such ducts, used for vapor removal ventilation of commercial type cooking equipment.

12. Prohibited Uses of Flexible Cord - Flexible cord will not be used:
   a. as a substitute for the fixed wiring of a structure,
   b. where run through holes,
   c. where run through doorways, windows, or similar openings,
   d. where attached to building surfaces, or
   e. where concealed behind walls, ceilings, or floors.
16.07. APPLIANCES - PORTABLE

Portable appliances and equipment will be properly grounded. Each appliance will be provided with a means for disconnection for all ungrounded conductors. Switches on hand-held tools will be of a type which must be manually held in the closed position. Flexible cord will be used only in continuous lengths without splice or tape. Flexible cords and cables and their associated fittings will be suitable for the conditions of use and locations. Worn or frayed electric cables will not be used.

16.08. EQUIPMENT - FIXED

Fixed equipment will be properly grounded. In locations where dust will collect on or in motors in such quantities as to seriously interfere with the ventilation or cooling of motors, and thereby cause dangerous temperatures, suitable types of enclosed motors which will not overheat under the prevailing conditions will be used.

Switchboards which have any exposed live parts will be located in permanently dry locations and then only where under competent supervision and accessible only to qualified persons. Switchboards will be so placed as to reduce to a minimum the probability of communicating fire to adjacent easily ignitable material.

16.09. GENERATORS

Generators will be located in dry places. Live parts of generators of more than 150 volts to ground will not be exposed to accidental contact where accessible to unqualified persons.

16.10. MOTORS - PROTECTION AGAINST HAZARDS

Suitable guards or enclosures will be provided to protect exposed current carrying parts of motors unless the motor is designed for the existing condition.

16.11. TRANSFORMERS

Exposed non-current carrying metal parts of transformer installations including fences, guards, etc., will be grounded where required under the conditions and in the manner prescribed for electrical equipment and other exposed metal parts. Oil transformers located indoors will be installed in a vault of fire resistive construction, ventilated and well lighted. For further information see National Fire Protection Association 70-450-24. Askarel-insulated and dry type transformers located indoors will be adequately ventilated. Rooms and spaces will be so arranged with fences, screens,
partitions, or walls as to prevent entrance of unauthorized attendants and entrances will be kept locked. The operating voltage of the exposed live parts of transformer installations will be indicated by signs or visible markings on the equipment or structures. Material will not be stored in transformer vaults.

16.12. HAZARDOUS LOCATIONS - GENERAL

All wiring, components, and utilization equipment will be approved by the Underwriter’s Laboratories, Inc., and/or the Factory Mutual Laboratory provided such equipment is commercially available. All approved equipment will be used only within the scope of the approval. Equipment approved for a specific hazardous location will not be installed or intermixed with equipment approved for another specific hazardous location. Special attention will be given to workmanship to ensure that all wiring components and utilization equipment are maintained as vapor, dust, or fiber tight as contemplated by their approvals. There will be no loose or missing screws, gaskets, threaded connections, or other impairments to this tight condition. Equipment and associated wiring approved as intrinsically safe may be installed in any hazardous location for which it is approved, and the provisions of Articles 500-517 of the National Electrical Code need not apply to such installations.

Hazardous locations are defined as follows:

1. **Class I Locations** - Those locations that are hazardous because flammable gases or vapors are or may be present in quantities sufficient to produce explosive or ignitable mixtures,

2. **Class II Locations** - Those locations that are hazardous because of the presence of combustible dust, or

3. **Class III Locations** - Those locations that are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be in suspension in air in quantities sufficient to produce ignitable mixtures.

16.13. BATTERY ROOMS AND STATIONARY BATTERY AREAS

Storage batteries should be so located as to be not accessible to other than properly qualified persons. Batteries of the non-sealed type will be located in separate rooms or enclosures so arranged as to prevent the escape into other rooms of objectionable quantities of electrolyte spray. Provision will be made for sufficient diffusion of the gases from the battery to prevent the accumulation of an explosive mixture.
Wiring fittings, heating and ventilation appliances will be in accordance with the requirements of the National Electrical Code which sets forth the specifications for various installations. Racks and trays will be substantial and treated to be resistant to the electrolyte. Floors should be of acid resistant construction or be adequately protected from acid accumulations.
CHAPTER 17
WALKING/WORKING SURFACES

17.01. WALKING SURFACES

Surfaces of floors in the workplace, passageways, storerooms and service rooms will be kept in good repair, free from holes, splinters and loose boards so that they may be kept clean and orderly.

Aisles and passageways will be kept clear. There will be no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways will be appropriately marked.

17.02. SPECIAL PURPOSE FLOORING AND SURFACES

Mats, gratings, false floors, or other non-slip materials will be used in refrigerated compartments, wet process areas and other locations where drainage is necessary.

17.03. FLOOR OPENINGS AND FLOOR HOLE PROTECTION

Floor openings and floor holes such as ladderways, hatchways, floor chutes, manholes, into which a person can accidentally walk, will be guarded by either a standard railing with a toeboard on all exposed sides or a floor hole cover of standard strength. When cover is not in place, it will be constantly attended or protected on all exposed sides by a removable standard railing. Temporary floor openings will be constantly attended or protected by standard railings per OSHA Standard 1910.23 (See Appendix 17.03.01.A.).

17.04. OPEN-SIDED WORK SURFACES

Open-sided floors, platforms, and runways 4 feet or more above the floor or ground level will be guarded by a standard railing on all open sides with a toeboard to prevent falls of materials. Special hazards created by open-sided floors in close proximity to dangerous equipment, tanks or pits containing dangerous chemicals will be guarded with a standard railing and toeboard regardless of height.

17.05. SPECIFICATIONS FOR RAILINGS

1. Standard Railings (per OSHA 1910.23(e)(1)): Will consist of top rail, intermediate rail and posts, and will have a vertical height of
42 inches from upper surfaces of top rail to floor. The intermediate rail will be half way between the top rail and the floor.

a. Wood Railings (per OSHA 1910.23(e)(3)(i)): The posts will be of at least 2 x 4 inch stock, space not to exceed 6 feet with top and intermediate rails of at least 2 x 4 inch stock. Post may be spaced on 8 foot centers if top rail is made of two right angle pieces of 1 x 4 inch stock. The top rail will be smooth-surfaced throughout its length.

b. Pipe Railings (per OSHA 1910.23(e)(3)(ii)): The posts, top and intermediate railings will be at least 1 ½ inches nominal diameter with posts spaced not more than 8 feet on centers.

c. Structural Steel Railings (per OSHA 1910.23(e)(3)(iii)): The posts, top and intermediate rails will be of 2-inch by 2-inch by 3 1/8-inch angles or of other metal shapes of equivalent bending strength with posts spaced not more than 8 feet on center.

d. Load Strength: The anchoring of posts and framing of members for railings of all types will be of such construction that the completed structure will be capable of with-standing a load of at least 200 pounds applied in any direction at any point on the top rail.

e. Heavy Stresses: Additional strength should be provided by use of heavier stock, and closer spacing of posts and bracing when railings are subject to heavy stress.

2. Stair Railing (per OSHA 1910.23.(e)(2)): A stair railing will be of construction similar to the standard railing but the vertical height will not be more than 34 inches or less than 30 inches from the upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

3. Handrails (per OSHA 1910.23.(e)(5)): Mounting of handrails will be directly on a wall or partition using brackets on the lower side of the handrail so as to offer no obstruction to a smooth surface along its top and sides.

a. Height of handrails will be not more than 34 inches from the upper surface of handrail to surface of tread, in line with the face of the riser or to the surface of the ramps.
b. Handrails of hardwood will be at least 2 inches in diameter. Handrails of metal pipe will be at least 1 ½ inches in diameter.

c. Brackets will be of such length as will give clearance of at least 3 inches between hand-rail and wall or any projection and spacing will not exceed 8 feet.

d. Mounting of handrails will be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.

4. **Stairway Railing Requirements (per OSHA 1910.23(d))**: Every flight of stairs having four or more risers will be equipped with standard stair railings or standard handrails. The width of the stair, measured clear of all obstructions except handrails, will determine railing requirements.

   a. Stairways less than 44 inches wide with both sides enclosed require at least one handrail; with one open side, at least one stair railing on the open side; with both sides open, one stair railing on each side.

   b. Stairways more than 44 inches wide but less than 88 inches wide require one handrail on each enclosed side and one stair railing on each open side.

   c. Stairways more than 88 inches wide will be equipped similarly with one intermediate stair railing approximately midway of the width.

   d. Winding stairs will be equipped with a hand-rail offset where the treads are less than 6 inches wide.

17.06. SPECIFICATIONS FOR TOEBOARDS AND OTHER PROTECTION

Standard toeboards will be 4 inches in vertical height from its top edge to the level of the floor, platform, runway or ramp securely fastened with no more than 1/4 inch clearance above floor level. It may be made of any substantial material either solid or with openings not over 1 inch in greatest dimension.

Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to the intermediate, or top rail, will be provided (per
17.07. FLOOR AND ROOF LOADING

Conspicuous posting of live loads will be required in every building or other structure used for industrial or storage purposes. It will be “unlawful” to place, or cause or permit to be placed, on any floor or roof of a building, or other structure, a load greater than that for which such floor or roof is approved by the building official. Safety floor loads will not be exceeded. For water absorbent commodities, normal floor loads should be reduced to take into account the added weight of water which can be absorbed during fire fighting operation (per OSHA 1910.22(d)).

17.08. LADDERS - GENERAL

The minimum design live load for fixed ladders will be a single concentrated load of 200 pounds. The number and position of additional concentrated live load of units of 200 pounds each, as determined from anticipated usage of the ladder, will be considered in the design.

Portable (rung and cleat) non-self-supporting ladders will be erected at a pitch of 72-1/2 degrees for maximum balance and strength. A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical support equal to 1/4 of the working length (i.e., the length along the ladder between the foot and top support) of the ladder. Ladders will be placed so as to prevent slipping, or they will be lashed, or held in position. Ladder rails will extend at least 36 inches above landings.

Ladders will be inspected regularly, with the intervals between inspection being determined by use and exposure, and those with defects will be removed from service and tagged or marked “Dangerous - Do Not Use”. The use of ladders with broken or missing rungs, cleats, steps or side rails or other faulty equipment is prohibited. Ladders will be maintained in good repair. Ladders with improvised repairs will not be used. All wood parts will be smoothly machined and dressed on all sides so as to be free from sharp edges and splinters.

17.09. PORTABLE WOOD LADDERS

Ladders provided by the employer will be in accordance with American National Standards Institute A14.1-2000; “Safety Code for Portable Wood Ladders” and OSHA Requirement 1910.25. Construction and testing requirements are different for each type ladder because of the variety of materials and hardware used; therefore, additional detailed specifications for ladders described herein or for other special type ladders not covered, if required, will be obtained from the referenced standards.
17.10. PORTABLE METAL LADDERS

Ladders provided by the employer will be in accordance with American National Standards Institute A14.2-2000; “Safety Code for Portable Metal Ladders” and OSHA Requirement 1910.26. Construction, design and testing requirements are different for each type ladder because of the variety of materials and hardware used; therefore, additional detailed specifications for ladders described herein or for other special type ladders not covered, if required, will be obtained from the referenced standards.

17.11. FIXED LADDERS

This section is intended to cover general requirements for fixed ladders of the individual rung and rail type construction. Because of the different design and specification requirements, more detailed information, if needed, should be obtained from American National Standards Institute A14.3-1992; “Safety Code for Fixed Ladders” and OSHA Requirement 1910.27. The preferred pitch of fixed ladders will be considered to come in the range of 75 degrees and 90 degrees with the horizontal. Ladders having a pitch in excess of 90 degrees with the horizontal will not be permitted.

Construction of fixed ladders will be designed to support a live load of at least 200 pounds. Rungs, cleats, and steps will be free of splinters, sharp edges, burrs, or projections. Refer to OSHA Requirement 1910.27 for detailed specifications as to dimensions and construction features for rungs, cleats, side rails, fastenings, and splicing. Side rails which might be used as a climbing aid will be without sharp edges, burrs, or projections.

When different types of materials are used in the construction of a ladder, the materials used will be so treated as to have no deleterious effect, one upon the other. Adequate means will be taken to protect dissimilar metals from electrolytic action when such metals are joined.

When ladders are used to ascend to heights exceeding 20 feet, landing platforms will be provided for each 30 feet of height or fraction thereof, except that, where no cage, well, or ladder safety device is provided, landing platforms will be provided for each 20 feet of height or fraction thereof. Landing platforms will be equipped with standard railings and toeboards so arranged to give safe access to the ladder. Platforms will be not less than 24 inches in width and 30 inches in length. The step-across distance from nearest edge of the ladder to the nearest edge of equipment or structure will be not more than 12 inches, or less than 2-1/2 inches.
CHAPTER 18
BOILERS, HEATING AND COOLING EQUIPMENT,
PRESSURE VESSELS, AND PIPING

18.01. GENERAL

Appliances will be installed in a location in which the facilities for ventilation permit satisfactory combustion, proper venting, and the maintenance of ambient temperature at safe limits under normal conditions of use.

18.02. LOCATION

Boilers will be located, when possible, in a detached building. When in the same building the boiler rooms will be cut off by fire partitions, without openings, having a fire resistance rating of not less than two hours.

18.03. POWER BOILERS

All power boilers will be manufactured, installed, operated, maintained, and subjected to periodic tests and inspections as provided in the American Society of Mechanical Engineers Power Boiler Code and as required by the Tennessee Department of Labor and Workforce Development; Boiler and Elevator Inspection & Licensing Division. Power boiler fittings and attachments such as safety valves, fuel supply cut off valves, gauge glasses, low water cut off, pressure gauges, and other similar devices will be in operating condition, of proper size and capacity, and meet the code requirements for safe working pressure.

Boiler inspection at prescribed intervals and approved (certification) by a recognized boiler inspection service will be acceptable evidence of satisfactory installation, maintenance and testing. Valid inspection certificates bearing the signature of the authorized inspector and the date of the last inspection will be conspicuously posted. A certificate issued by the authority having jurisdiction may be accepted in lieu of a signed certificate of inspection.

18.04. HEATING BOILERS - LOW PRESSURE
STEAM AND HOT WATER BOILERS

All heating boilers will be manufactured, installed, operated, maintained, and subjected to periodic tests and inspections as provided in the American Society of Mechanical Engineers Heating Boiler Code and as required by the Tennessee Department of Labor and Workforce Development; Boiler and Elevator Inspection & Licensing
Steam and hot water boilers respectively will be provided with automatic limiting devices for shutting down the burner(s) to prevent boiler steam pressure or boiler water temperature from exceeding the maximum allowable pressure or temperatures. Steam and hot water boilers will be equipped respectively with listed steam safety or pressure relief valves of appropriate discharge capacity and conforming to American Society of Mechanical Engineers requirements. Steam safety valves and pressure relief valves will be set to discharge at a pressure not to exceed the maximum allowable working pressure of the boiler.

18.05. HEATING EQUIPMENT OTHER THAN STEAM OR HOT WATER BOILERS

Heating appliances using fuel will be provided with automatic limit controls which will prevent over heating. Where air for combustion is supplied by a source which may be interrupted without shutting off the fuel supply, the fuel and atomizing or air supply will be interlocked in a manner to immediately shut off the fuel supply upon failure of the atomizing or air supply. Suspended type heaters will be safely and adequately supported.

Heating appliances using gas for fuel will meet the requirements of the American National Standards Institute B31.1 for associated piping. Electric heaters will be installed in accordance with the American National Standards Institute C1. All exposed metal parts of fixed space heating equipment liable to become energized will become grounded.

18.06. PRESSURE VESSELS

Air receivers, aftercoolers, digesters, steam kettles or process vessels subject to pressure or vacuum will be constructed to the requirements of the American Society of Mechanical Engineers Pressure Vessel Code, Section VIII. Pressure vessels will be inspected periodically and subjected to a hydrostatic test of one and one-half times the safe working pressure of the vessel annually. Pressure relief valves and vacuum relief devices where needed will be provided to relieve pressure in excess of the safe working pressure.

18.07. PIPING SYSTEM

Each piping system will include one or more pressure relief or other safety device such as automatic shutoff valves when the maximum allowable inlet pressure to one or more of the pressure reducing devices supplying the system is greater than the maximum allowable operating pressure of the system. Proper protection will be provided to prevent possible injury or damage by the discharge of gases from such devices. A pressure gauge
or a valved connection for a pressure gauge will be located at the outlet of each pressure reducing valve. Piping and equipment will be supported in a substantial manner, rigid enough to prevent excessive vibration, and anchored sufficiently to prevent undue strains on equipment served. Suitable spring hangers, sway bracing, vibration dampeners, etc., will be provided where necessary.

The arrangement of piping and supports as required above, will provide for safety under working stresses and will protect the piping from detrimental sagging, external mechanical injury, abuse, and exposure to unusual service conditions from sources other than those due to pressure, temperature, and vibration. There will be no intervening stop valve between the protective device or devices and the point of discharge. When discharging directly to the atmosphere, discharge will not infringe on other piping or equipment and will be directed away from platforms and other areas used by personnel.

Exposed steam and hot water pipes within 7 feet of the floor or working platform or within 15 inches measured horizontally from stairways, ramps, or fixed ladders will be covered with an insulating material, or guarded in such manner as to prevent contact. Positive identification of piping system content will be by lettered legend giving the name of the content in full or abbreviated form. Color bands, if used, will be painted or applied on the pipes and should be installed at frequent intervals on straight pipe runs close to all valves.
CHAPTER 19

POWERED PLATFORMS, MANLIFTS, AND VEHICLE-MOUNTED WORK PLATFORMS

19.01. ELEVATORS

19.01.01. Tests, Inspection, and Certification

Existing installations, and new installations, after being placed in service, will be subjected to periodic inspections and tests at regular intervals by the Tennessee Department of Labor and Workforce Development; Boiler and Elevator Inspection & Licensing Division, to determine that the equipment is in safe operating condition. Certificates of inspection and tests will be conspicuously posted in the car. They will be dated and will bear signatures of the inspecting officials. Every elevator will be provided with a capacity plate, and date, permanently and securely fastened in place. All elevators shall be in accordance with the 1996 ANSI American National Safety Code A17-1.

19.01.02. Hoistway Protection

Hoistways will be enclosed throughout their height with fire-resistive enclosures, and all hoistway landing openings will be protected with fire-resistive door assemblies. Elevator hoistway landing openings will be provided with hoistway doors which will guard the full height and width of the opening. Hoistway doors will be equipped with hoistway-unit system hoist-door interlocks.

19.01.03. Car

Elevator cars will have a platform consisting of a non-perforated floor attached to a platform frame supported by the car frame, and extending over the entire area within the car enclosure. The platform frame members and the floor will be designed to withstand the forces developed under the landing conditions for which the elevator is designed and installed. A door or gate will be provided at each entrance to the car. Elevator cars will be permanently enclosed on all sides and the top (i.e., except sides used for entrance and exit).

Cars will be provided with an electric light or lights. Not less than two (2) lamps will be provided. The level of illumination for passenger and freight elevators will be at least 20 foot candles or as recommended by the Illuminating Engineering Society of North America (IESNA).
Cars will be equipped with safety devices to stop and hold the car or platform in event of overspeed or any casualty which results in failure of hoist machinery to control travel in the down direction. Upper and lower terminal stopping devices will be provided and arranged to slow down and stop the car automatically at or near the top and bottom terminal landings, with any load in the car and from any speed attained in normal operation. Final terminal stopping devices will be provided and arranged to cause the electric power to be removed automatically from the elevator driving-machine motor and brake after the car has passed a terminal landing. Elevators which are operated at any time without a designated operator in the car will be provided with one emergency signal device operable from within the car.

Enclosures will be of metal without perforations to a height of not less than six (6) feet above the platform floor. Above the six (6) foot level, the walls and top of the enclosure wall in front of and extending six (6) inches on each side of the counterweight will be without perforations. Perforated portions of enclosures will reject a ball one and one-half (1 ½) inches in diameter.

Freight elevators will not be permitted to carry passengers. Freight elevators will not be loaded to exceed their rated load as specified on the capacity plate.

19.01.04. Machinery Spaces

Floors over hoistways will be capable of sustaining a concentrated load of three hundred (300) pounds on any four (4) square inches; and where it constitutes the floor of the main or secondary-level machinery space, it will be designed for a live load of not less than one hundred and twenty-five (125) pounds per square foot in all open areas. Spaces containing machines, control equipment, sheaves, and other machinery will be enclosed with fire resistive enclosures.

A permanent, safe and convenient means of access to elevators and dumbwaiter machine rooms and (overhead) machinery spaces will be provided for authorized persons. Exposed gears, sprockets, sheaves, drums, floor controllers, chains, and tapes will be guarded to protect against accidental contact.
CHAPTER 20
MEANS OF EXITING BUILDINGS

20.01. GENERAL APPLICATIONS

20.01.01. Exit Facilities

The capacity of occupancies, other than educational occupancies, will be one person per 100 square feet gross floor area. For special purpose occupancy other than educational occupancies and open structures, the capacity will be the maximum number of persons to occupy the area under any probable condition.

Means of egress (i.e., exiting buildings) will be measured in units of exit width of 22 inches. Fractions of a unit will not be counted, except that 12 inches added to one or more full units will be counted as one-half a unit of exit width. Units of exit width will be measured in the clear at the narrowest point of the means of egress except that a handrail may project inside the measured width on each side not more than 3-1/2 inches and a stringer may project inside the measured width not more than 1-1/2 inches. An exit or exit access door swinging into an aisle or passageway will not restrict the effective width thereof at any point during its swing to less than the minimum widths hereafter specified.

The capacity of a unit width will be as follows:

<table>
<thead>
<tr>
<th>Exit</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Doors leading outside the building at grade or not more than 21 inches above or below grade</td>
<td>One unit for 60 persons</td>
</tr>
<tr>
<td>2. Horizontal exits</td>
<td>One unit for 100 persons, but not more than 50 percent of exit capacity</td>
</tr>
<tr>
<td>3. Ramps</td>
<td>Class A, one unit for 100 Persons</td>
</tr>
<tr>
<td></td>
<td>Class B, one unit for 60 Persons</td>
</tr>
</tbody>
</table>

Any street floor exit will be sufficient to provide the following numbers of units of exit widths:
1. One unit for each 100 persons capacity of street floor, plus

2. One and one-half units for each two units of stairway or ramp from basement discharging through the street floor.

The minimum width of any corridor or passageway serving as a required exit of means of travel to or from a required exit will be 44 inches in the clear. Not less than two exists will be provided for every floor or section including basements used for industrial purposes or uses incidental thereto.

For rooms or areas with a total capacity of less than 25 persons having direct exit to the street or to an open area outside the building at grade level, with a total travel distance from any point of not over 50 feet, a single exit may be permitted. Such travel will be on the same floor level, or if the traversing of stairs is required there will not be a vertical travel of more than 15 feet, and such stairs will be provided with complete enclosures to separate them from any other part of the building with no door openings therein.

Exits will be as remote from each other as practicable, so arranged that it will not be necessary to travel more than 100 feet from any point to reach the nearest exit, or 150 feet in a building protected by a complete automatic sprinkler system. From every point there will be at least two separate exists accessible so arranged as to be reached by different paths of travel in different directions except that a common path of travel may be permitted for the first 50 feet from any point, (i.e., no dead end may be more than 50 feet deep).

In any building completely protected by automatic sprinklers, one-half of required exits from floor above or below the street may discharge through the main street floor area instead of directly to the street, or through a fire-resistive passage to the street, provided that:

1. No more than one-half of the required exit units from any single floor considered separately discharge through the street floor area,

2. The exits are enclosed to the street floor (i.e., see Section 6-1 of National Fire Protection Association 101),

3. The distance of travel from the termination of the enclosure to an outside street is not more than 50 feet, and

4. The street floor doors provide sufficient units of exit width to serve as exits discharging through the street floor in addition to the street floor itself.

An exit door will be of the swinging type. It will swing with exit travel except when serving a story having a population of not more than 50 persons, provided there are
no hazard contents. A door giving access to a stairway will swing in the direction of exit travel. A door during its swing will not block stairs or landings and in no case in new buildings will any door at any point in its swing reduce the effective width of stair or landing to less than 20 inches, nor when open interfere with the full use of the stairs.

An exit door will be so arranged as to be readily opened from the side from which egress is to be made at all times when the building served thereby is occupied. Locks, if provided will not require the use of a key for operation from the inside of the building. A latch or other fastening device on an exit door will be provided with a knob, handle, panic bar, or other simple type of releasing device, the method of operation of which is obvious, even in the darkness.

Every required exit, way of approach thereto and way of travel from the exit into the street or open space, will be continuously maintained free of all obstructions and impediments to full instant use in the case of fire or other emergency.

20.01.02 Fire Alarm Systems

In any building not provided with automatic fire detection facilities, or automatic sprinklers, a manual fire alarm system will be provided if the total capacity of the building is over 500 persons or if more than 25 persons are employed below street level, except that no manual fire alarm system will be required in one-story buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

20.01.03 Special Purpose Occupancy

Special purpose occupancy includes all buildings, except high hazard occupancy designed for and suitable only for particular types of operations, characterized by a relatively low density of employee population with much of the area occupied by machinery or equipment. (This becomes ordinary and low hazard with low population density).

Special purpose occupancies will have exits and other features in accordance with the provisions for general occupancies in Section 20.01.01 except as modified in this section. Exits need be provided only for the persons actually employed; spaces not subject to human occupancy because of the presence of machinery or equipment may be excluded from consideration.

20.01.04 High Hazard Occupancy

High hazard occupancy includes those buildings having contents that are liable to burn with extreme rapidity from which poisonous fumes or explosions are to be feared in the event of fire. High hazard occupancy will comply with the provisions for general
occupancy (i.e., see Section 20.01.01 above, except as modified in this section.

In addition to types of exits for upper floors specified for general occupancy, approved side escapes may be used as required exists for both new and existing buildings. From every point in every floor area there will be at least two exits accessible in different directions. Where the floor areas are divided into rooms, there will be at least two ways of escape from every room, however small, except for toilet rooms so located that the points of access thereto are out of or suitably shielded from areas of high hazards. Exits will be so located that it will not be necessary to travel more than 75 feet from any point to reach the nearest exit.

All high hazard occupancies will have automatic sprinkler protection or such other protection as may be appropriate to the particular hazard, including explosion venting for any area subject to dust explosion hazard, designed to minimize danger to occupants in case of fire or other emergency before they have time to utilize exits to escape.

20.01.05. Protection of Vertical Openings

Every stairway, elevator shaft, escalator opening, and other vertical opening will be enclosed or protected.

20.01.06. Emergency and Exit Lighting

Illumination of means of egress will be provided for every building and structure where artificial lighting is provided for normal use and occupancy of the building or structure. Every exit and the necessary ways of exit access thereto will be illuminated to facilitate egress. Such illumination will be continuous during the time that the conditions of occupancy require that the means of egress be available for use.

Signs designating exits or ways of travel thereto will be provided. Exit signs will be suitably illuminated by a reliable light source giving a value of not less than 5 foot candles on the illuminated surface.

20.01.07. Emergency Evacuation Plan

Emergency evacuation plans will be posted in appropriate locations (i.e., approved by the fire marshal) in the corridors of all buildings. Each plan will indicate the direction of travel from the rooms shown on the plan in the event it becomes necessary to evacuate the building as a result of fire or other emergency. Each instructor will be responsible for announcing to his/her students on a regular basis that there is an emergency evacuation plan for the building. Also, that any time the fire alarm sounds the building will be evacuated. Students will be made aware of the evacuation plan location
and instructed to follow this plan when evacuation of the building becomes necessary. Similarly, each department head will be responsible for ensuring employees under his/her supervision know the location of their related emergency evacuation plan and what to do in the event evacuation becomes necessary.

Supervisory personnel in the immediate vicinity of the posted emergency evacuation plans will be responsible for insuring that the plans are present in the appropriate locations. Supervisory personnel must notify the Plant Operations Department if the plan/s for their area is/are defaced or otherwise need replacement.

20.01.08. Fire Exit and General Purpose Stairs

These include stairs, stairways, and steps required in occupancies for fire protection, normal occupancy and general building access but exclude fixed industrial stairs.

Stairs will be constructed so that the height of every riser and the width of every tread will be so proportioned that the sum of two risers and a tread, exclusive of its nosing or projection, is not less than 24 or more than 25 inches. The maximum height of risers will be 8 inches; the minimum width of tread exclusive of nosing or projection will be 9 inches.

The rated capacity of stairs will be 45 persons per minute per 22 inch unit width. Each stair will be designed to carry a load of 100 pounds per square foot, or a concentrated load of 300 pounds so located as to produce maximum stress conditions. Where materials of stair tread and landing is such as to involve danger of slipping, non-slip materials will be provided on tread surface. See Section 17.05 “Specifications for Railings” of this manual for railings details.

20.01.09. Ramps

A ramp may be used as an exit or exit component in a means of egress if it meets the following requirements:

1. Ramp Specifications - Class A ramps will have a width of 44 inches or greater, slope of 1 or 1-3/16 in 12, no limit to maximum height between landings, with a capacity in persons per unit for exit width of 60 in the down direction and 45 in the up direction,

2. A Class B ramp will be 30 to 44 inches width, 1-3/16 to 2 in 12 slope, maximum height between landings of 12 feet, and a capacity in persons per unit of exit width of 45 persons in either down or up direction,
3. A ramp and the platforms and landings associated therewith will be designed for not less than 100 pounds per square foot live load,

4. The slope of ramps will not vary between landings. Landings will be level and change of direction of travel, if any, will be made only at landings,

5. A ramp will have a non-slip surface, and

6. Construction requirements and details for guards and handrails vary according to class of ramp and size of occupancy. (i.e., See Chapter 5 on National Fire Protection Code for specific details).

20.01.10. Stair and Ramp (Vertical Opening)

Every stairway, ramp, elevator shaft, light and ventilator shaft, chute and other opening between stories will be enclosed or protected to prevent the spread of fire and smoke.

Each floor opening will be enclosed by substantial walls, with approved, self-closing fire doors or windows provided in openings. Such walls will have a fire resistance as follows: new buildings 4 storied or more in height, 2 hours, non-combustible construction; other new buildings, 1 hour; existing buildings, 1 hour.

Only listed or labeled (Class A or B) doors will be used. Any swinging fire doors and any door in stair enclosure walls designed to prevent the spread of fire will be provided with approved positive latching means to hold it in the closed position against the pressure of expanding fire gases. Enclosure door will not at any time be secured in the open position.

NOTE: Except for certain electrically activated door releases an enclosure door will bear a sign reading substantially as follows:

“FIRE DOOR—KEEP DOOR CLOSED”

20.02. EDUCATIONAL OCCUPANCIES

20.02.01. Exit Facilities

Every educational building, and every floor, section of room thereof considered separately, will have exits sufficient to provide for the capacity thereof, comprised of one or more types of exits, as follows:
Exit	Capacity
1. Any door leading directly outside the building at ground level, or not to exceed 3 risers above or the ground \[100\text{ persons per unit per exit width}\]
2. Any door leading outside the building but requiring steps of over risers to reach the ground \[100\text{ persons per unit of exit width; steps must have 1/3 more units of width than door to allow for slower travel rates.}\]
3. Stair, outside stairs, or smokeproof towers \[60\text{ persons per unit of exit width}\]
4. Class B Ramps \[60\text{ persons per unit of exit width}\]
5. Horizontal exits \[100\text{ persons per unit width}\]

The same exit units or fraction thereof required for any individual floor may be counted as simultaneously serving all floors above the first story or floor of exit discharge.

Every room or space with a capacity of over 50 persons or over 1,000 square feet in area will have at least 2 doorways as remote from each other as practicable. Such doorways will provide access to separate exits, but, where egress is through corridors, may open upon a common corridor leading to separate exits in opposite directions.

Except in open plan and flexible plan buildings, travel distance to an exit from any point in a building without a complete automatic fire extinguishing system will not exceed 150 feet, and will not exceed 200 feet in any building.

Any corridor will not be less than 6 feet wide in the clear. Doors which swing into an exit access corridor will be recessed to prevent interference with corridor traffic; and doors not so recessed will open 180 degrees to stop against wall. Doors in any position will not reduce the required minimum 6-foot corridor width.

Where exterior corridors or balconies are provided as means of exit, they will open to the outside air except for railing or balustrades, with stairs or level exits to grade not over 250 feet apart, so located that an exit will be available in either direction from the door to any individual room or space, with dead ends not to exceed 20 feet. In
balconies are enclosed by glass or in any other manner, they will be treated as interior corridors. The floors of balconies (exterior corridor) and stairs will be solid, without openings, and will comply with requirements for outside stairs as regards balustrades or railings, width and pitch of stairs, and other details, but are not required to be shielded from fire within the building by blank walls, wired glass windows or the like where the stairs are located on the side of balcony or corridor away from the building and are separated from the building by the full required width of the balcony or corridor. Regardless of other provisions, exterior balconies and stairs may be of the same type of construction as the building which they serve.

Exits will be so arranged that at least 2 separate exits will be available from every floor area. Exits will be as remote from each other as practicable, so arranged that there will be no pockets or dead ends of appreciable size in which occupants may be trapped, and in no case will any dead-end corridor extend more than 20 feet beyond the stairway or other means of exit there from. Every classroom or room used for educational purposes or student occupancy, below the floor of exit discharge, will have access to at least 1 exit which leads directly to the exterior at level of discharge, without entering the floor above.

All exit doors will be kept normally closed or protected by an approved self-closing assembly. If a room or space is subject to occupancy by more than 50 persons, exit doors will swing out. Only 1 locking or latching device will be permitted on a door or a leaf or a pair of doors.

Any interior door and any room door subject to use by 100 or more persons will be operated by bars or other panic hardware devices except that a door leading directly to the outside from a classroom occupied by less than 100 persons may be equipped with the same knob-operated school-house type lock as is used on classroom doors leading to corridor, with no provision whatsoever for locking against egress from the classroom.

20.02.02. Lighting and Signs

All educational buildings will have adequate exit illumination in accordance with Section 5-10 of the 2003 edition of the Life Safety Code (NFPA Code 101). Flexible plan and open plan buildings and buildings designed for night occupancy and portions of buildings having interior and windowless rooms, areas, and corridors, will have Type 1 emergency exit illumination. All educational buildings will have signs designating the location of exits or the path of travel to reach them. Signs are not required in situations where location of exits is otherwise obvious and familiar to all occupants, such as in small elementary school buildings.

20.02.03. Windows for Rescue and Ventilation
Except in buildings with complete sprinkler protection, every room or space used for classroom or other educational purposes or normally subject to student occupancy, unless it has a door leading directly to the outside of the building, will have at least one outside window which can readily be used for emergency rescue. Also, in buildings without specially designed ventilation systems, every room or space will have at least one outside window or door leading directly to the outside that can be used for ventilation purposes.

A clear opening will be provided with a minimum dimension of approximately 22 inches and that is approximately 5 square feet in area. The bottom of the window opening will not be more than 32 inches above the floor. Where storm windows, screens, or burglar guards are used, these will be provided with quick opening devices so that they may be readily opened from the inside for emergency egress, and will be so arranged that when opened they will not drop to the ground.

20.02.04. Protection of Vertical Openings

Any interior stairway and other vertical opening in educational buildings will be enclosed and protected. In educational buildings, stairway enclosures will not be required for a stairway serving only one adjacent floor, except a basement, and not connected with corridors or stairways serving other floors.

20.02.05. Interior Corridors

Every interior corridor will be of construction having not less than a 1-hour fire resistance rating, and all openings therein protected accordingly. Room doors may be 1-3/4 inch solid bonded core wood doors or the equivalent. Such corridor protection will not be required when all classrooms served by such corridors have at least one door directly to the outside or to an exterior balcony or corridor.

Any interior corridor more than 300 feet in length will be divided into sections not to exceed 300 feet in length by smoke barriers, consisting of partitions with smoke stop doors therein. Such partitions will be continuous through any concealed space such as between the hung ceiling and the floor or roof above. Doors in smoke barriers will be at least the equivalent of metal, metal covered, 1-3/4 inch solid bonded core wood or approved treated wood construction, with clear wire glass panels. Such doors will be self-closing and will be either single or in pairs. They will close the opening completely with only such clearance as is reasonably necessary for proper operations.

20.02.06. Interior Finish

Interior finish will be Class A in corridors, stairways, and other means of egress, and may be Class B or C elsewhere in accordance with the provisions of Section 6-2 of

20.02.07. Fire Alarm System

Approved manually operated fire alarm facilities will be provided in every educational building. In buildings provided with automatic sprinkler protection, the operation of the sprinkler system will automatically actuate the college’s electrical fire alarm system.

20.02.08. Automatic Sprinkler Protection

Every portion of educational buildings below the floor of exit discharge will be protected with complete automatic sprinkler system.

20.02.09. Hazardous Areas

An area used for general storage, boiler or furnace rooms, fuel storage janitors closets, maintenance shops including woodworking and painting areas, laundries and kitchens, will be separated from other parts of the building with construction having not less than a 1-hour fire resistance rating and all openings will be protected with self-closing fire doors, or such area will be provided with automatic sprinkler protection. Where the hazard is severe, both the fire-resistive separation and automatic sprinklers will be provided.

20.02.10. Elevators

An elevator will not constitute required means of exit. When an educational occupancy is more than 3 stories high or more than 3 stories above grade and equipped with automatic elevators, one or more elevators will be designed and equipped for fire emergency use by fire fighters. Key operation will transfer automatic elevator operation to manual and bring elevator to ground of first floor for use of fire service. The elevator will be situated so as to be readily accessible by the fire department.

20.02.11. Air Conditioning

All air-conditioning systems must comply with Section 90A of the National Fire Protection Association, Volume 4.

20.02.12. Electrical Wiring and Equipment
Electrical wiring and equipment will be in accordance with appropriate standard, and all cooking and heating equipment, incinerating and other building service equipment will be installed in accordance with Chapter 7 of the 2003 edition of the Life Safety Code.

20.03. HANDICAPPED PERSONNEL

20.03.01. Elevators

A minimum interior cab size of 5 feet by 5 feet 6 inches will be observed. The door will provide a clear opening of 32 inches. The door will have a safety edge with a sensing device. Controls will not be installed at a height in excess of 48 inches. Control devices will have instructions that can be understood by both seeing and visually impaired (i.e., raised/countersunk lettering, numbers, and/or symbols) persons. Both audible and visual signals at landings will be provided. Handrails will be provided on sides of the cab at a minimum.

An unobstructed area that will be at least 4 feet by 5 feet will be provided in front of the elevator entrances.

Elevators are not to be used in the event of a fire or other emergency. Thus, in those college multi-level facilities that do not have ramps but have an elevator instead, the following procedure will apply to handicapped persons (i.e., especially the mobility impaired).

1. All handicapped persons using college facilities should be informed that they should enter the nearest safe stairwell in event of this type of emergency.

2. For those individuals that cannot proceed down the stairwell (e.g., people in wheelchairs) they should wait to be assisted.

3. Walters State Community College employees will assist such handicapped individuals to exit the building provided such action is reasonable and safe.

It is the responsibility of all Walters State employees to be aware of, understand, and promulgate this procedure to all handicapped persons using college facilities (e.g., faculty will inform handicapped students in their classes of the procedures).
CHAPTER 21
FIRST AID AND HEALTH SERVICES

21.01 FIRST AID FACILITIES

In the absence of an infirmary, clinic or hospital in close proximity to college facilities, which is used for the treatment of injured individuals, a college person or persons will be adequately trained (i.e., current American National Red Cross Certificate or its equivalent) to render first aid. Only appropriately trained employees will be permitted to render first aid. First aid supplies will be readily available at all college facilities.

21.02 HEALTH SERVICES

The Health Clinic, located on the first floor of the College Center Building on the main campus, will function as a basic first aid station for treatment of any minor injuries or illnesses. A registered nurse will be on duty Monday - Friday from the hours of 8:00 a.m. - 4:30 p.m. when the college is in session. A variety of laboratory screenings will be available to the staff and students at no charge, to include screenings for anemia, diabetes and, blood pressure.

Wellness programs, drug programs, rape and sexually transmitted diseases awareness programs, and other programs will be available each semester to students, faculty, and staff. This wellness program will provide information on nutrition, dieting, stress reduction, exercising, and staying healthy. Available for use will be exercise videos.

Various types of health counseling will be provided both in groups and on an individual basis, by appointment, followed by appropriate medical referrals, if needed. Family Planning referrals will be made to the Hamblen County Public Health Department.

The staff of the Health Clinic will maintain information regarding health care in a confidential manner.

21.03 PROCEDURES FOR SUMMONING AID

The Campus Police Office has been designated the campus agency to respond to all emergencies including accidents and serious illness. The responding campus police officer will effect transportation for emergency treatment.

In the event of an emergency call the Campus Police Office and:
1. Give your name,

2. Advise the campus police officer of the nature of the emergency,

3. Give the location of the incident,

4. Give your telephone number, and

5. Remain on the phone until released by the security officer.

The campus police officer will summons emergency equipment to the scene, if needed, and will advise the Health Clinic and a local hospital, as appropriate, that an emergency vehicle is in transit. If possible the employee will contact his/her supervisor and notify the supervisor of the emergency.

21.04 EMERGENCY SHOWERS AND FLUSHING EQUIPMENT

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within the work area (i.e., within 25 feet) for immediate emergency use. Where such emergency drenching or flushing equipment is subject to cold or freezing temperatures, provisions will be made to protect the equipment against freezing.
CHAPTER 22
FIRE PROTECTION

22.01. GENERAL

All fire-fighting appliances will be in accordance with National Fire Protection Association regulations. Where local requirements are equal or superior to National Fire Protection Association requirements they may be applied.

22.02. PORTABLE FIRE EXTINGUISHERS

22.02.01. General

Portable fire extinguishers are designed to cope with fires of limited size and are necessary even though the property may be equipped with automatic sprinklers, stand-pipes and hose, or other fixed protection equipment. Care should be taken in selecting extinguishers that are to be transported from one area to another during a fire since all extinguishers cannot be used on all fires. An example of this is that a water type extinguisher can be used on wood fires but should not be used on electrical fires.

Portable extinguishers will be maintained in a fully charged and operable condition, and kept in their designated places at all times when they are not being used. Under no condition will fire fighting equipment be removed or relocated by anyone other than employees of the Campus Police or Plant Operations Offices except for use in fire fighting. Tags on fire extinguishers will not be removed or altered. Extinguishers will not be obstructed from view and fire hose cabinets will be kept clear at all times.

Individuals, who for purposes other than fire fighting, discharge or damage extinguishers are not only endangering their own lives but are also endangering the lives and property of others and subject themselves to disciplinary action whether they be student, visitor, or employee.

22.02.02. Installation

Extinguishers will be conspicuously located where they will be readily accessible and immediately available in the event of fire. They should be located along normal paths of travel. Where practical; extinguishers should be located near exits from an area. Extinguishers will not be obstructed from view. In large rooms and in certain locations where visual obstructions cannot be completely avoided, means will be provided to indicate the location and intended use of extinguishers.
Extinguishers will be installed on the hangers or in the brackets supplied, mounted in cabinets, or set on shelves unless the extinguishers are of the wheeled typed. Extinguishers having a gross weight not exceeding 40 pounds will be installed so that the top of the extinguisher is not more than 5 feet above the floor. Extinguishers having a gross weight greater than 40 pounds (i.e., except wheeled type) will be so installed so that the top of the extinguisher is not more than 3-1/2 feet above the floor. Extinguishers mounted in cabinets or wall recesses, or set on shelves will be placed in a manner such that the extinguishers operating instructions face outward. The location of such extinguishers will be marked conspicuously.

Extinguishers installed under conditions where they are subject to severe vibration will be installed in brackets specifically designed to cope with the vibration.

Extinguishers will be suitable for use within a temperature range of at least plus 40 to plus 120 degrees Fahrenheit. When extinguishers are installed in locations subjected to temperatures outside this range, they will be a type approved or listed for the temperatures to which they will be exposed, or placed in an enclosure capable of maintaining the temperatures to which they will be exposed.

22.02.03. Selection and Distribution

Fire extinguishers will be provided for the protection of both the building structure, if combustible, and the contents. Required building protection will be provided by fire extinguishers suitable for Class A fires. Occupancy hazard protection will be provided by fire extinguishers, suitable for such Class A, B, C, D, fire potentials as may be present. Extinguishers provided for building protection may be considered also for the protection of occupancies having a Class A fire potential. Combustible buildings having an occupancy hazard subject to Class B and/or Class C fires, will have a standard complement of Class A fire extinguishers for building protection, plus additional Class B and/or Class C extinguishers. Where fire extinguishers have more than one letter classification (i.e., such as 2-A and 20-BC), they may be considered to satisfy the requirements of each letter class.

Rooms or areas will be graded generally as light hazard, ordinary hazard, or extra hazard. Limited areas of greater or lesser hazard will be protected as required. A light hazard exists where the amount of combustibles or flammable liquids is such that fires of small size may be expected (e.g., in offices, schoolrooms, churches, assembly halls, or telephone exchanges). An ordinary hazard exists where the amount of combustible or flammable liquids present is such that fires of moderate size may be expected (e.g., in mercantile storage and display areas, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, or school shop areas). An extra hazard exists where the amount of combustible or flammable liquids present is such that fires of severe magnitude may be expected (e.g., in woodworking, auto repair, and aircraft servicing areas, warehouses with high-piled - 14 feet or higher - combustibles, or
in processes such as flammable liquids handling, painting, or dipping).

For ordinary combustibles the minimal sizes of fire extinguishers for the listed grades of hazard will be provided on the basis of the following table. Extinguishers will be so located that the maximum travel distance will not exceed those specified in this table.

**TABLE 22.02.03.A**

<table>
<thead>
<tr>
<th>Basic Minimum Extinguisher Rating for Area Specified</th>
<th>Maximum Travel Distances to Extinguishers</th>
<th>Area to be Protected Per Extinguisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Hazard Occupancy</td>
<td>Ordinary Hazard Occupancy</td>
<td>Extra Hazard Occupancy</td>
</tr>
<tr>
<td>1A 75 ft.</td>
<td>3,000Sq. ft.</td>
<td>Not permitted, except as specified in Par. 4120.</td>
</tr>
<tr>
<td>2A 75 ft.</td>
<td>6,000Sq. ft.</td>
<td>Not permitted, except as specified in Par. 4120.</td>
</tr>
<tr>
<td>3A 75 ft.</td>
<td>9,000Sq. ft.</td>
<td>4,500Sq. ft.</td>
</tr>
<tr>
<td>4A 75 ft.</td>
<td>11,250Sq. ft.</td>
<td>6,000Sq. ft.</td>
</tr>
<tr>
<td>6A 75 ft.</td>
<td>11,250Sq. ft.</td>
<td>9,000Sq. ft.</td>
</tr>
</tbody>
</table>

The protection requirements specified in the above table may be fulfilled by several extinguishers of lower rating for ordinary or extra-hazard occupancies. Where the floor area of a building is less than that specified in this table, at least one extinguisher of the minimum size recommended will be located so that the travel distance thereto will not exceed 75 ft.

For flammable liquids the minimum sizes of fire extinguishers for the listed grades of hazards will be provided on the basis of the following table. Extinguishers will
be located so that the maximum travel distances will not exceed those specified in this table (i.e., See Section 2120 National Fire Protection Association 101).

<table>
<thead>
<tr>
<th>Type of Hazard</th>
<th>Basic Minimum Extinguisher Rating</th>
<th>Maximum Travel Distance to Extinguisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>5B</td>
<td>50 ft.</td>
</tr>
<tr>
<td>Ordinary</td>
<td>10B</td>
<td>50 ft.</td>
</tr>
<tr>
<td>Extra</td>
<td>20B</td>
<td>50 ft.</td>
</tr>
</tbody>
</table>

Two or more extinguishers of lower rating, except for foam extinguishers will not be used to fulfill the protection requirements of the above table. Up to three foam extinguishers may be used to fulfill these requirements. The protection requirements may be fulfilled with extinguishers of higher ratings provided the travel distance to such larger extinguishers will not exceed 50 feet. For flammable liquid hazards of appreciable depth (Class B), such as in dip or quench tanks, Class B fire extinguishers will be provided on the basis of one numerical unit of Class B extinguishing potential per square foot of flammable liquid surface of the largest tank hazard within the area. Two or more extinguishers of lower rating, except for foam extinguishers, will not be used in lieu of the extinguisher required for the largest tank. Up to three foam extinguishers may be used to fulfill these requirements. When protection is sought for flammable liquid in appreciable depth and when the liquid surface area is in excess of 20 square feet, the protection requirements should be based on an evaluation of the extent of the hazard and engineering judgment applied.

Extinguishers with Class C rating will be required where energized electrical equipment may be encountered which would require a non-conducting extinguishing media. This will include fire either directly involving or surrounding electrical equipment. Since the fire itself will be a Class A or Class B hazard the extinguishers will be sized and located on the basis of the anticipated Class A or B hazards.

22.02.04. Inspection and Testing

Extinguishers will be inspected monthly, or at more frequent intervals when circumstances require, ensuring they are in their designated places, to ensure they have not been actuated or tampered with, and to detect any obvious physical damage, corrosion, or other impairments. At regular intervals, not more than one year apart or when specifically indicated by an inspection, extinguishers will be thoroughly examined and/or recharged or repaired to insure operability and safety, or replaced as needed. Any extinguisher showing defects will be given a complete maintenance check. Extinguisher
shells, cartridges, or cylinders, which show leakage or permanent distortion in excess of specified limits, or which rupture, will be removed from service. If, at any time, an extinguisher shows evidence of corrosion or mechanical injury, it will be subjected to a hydrostatic pressure test, or replaced. At intervals not exceeding those specified in National Fire Protection Association No. 101, extinguishers will be hydrostatically tested.

Each extinguisher will have a durable tag securely attached to show maintenance, test, or recharge date, test pressure if applicable, and the initials or signature of the person who performed this service.

Extinguishers removed from the premises to be recharged will be replaced by spare extinguishers during the period they are gone.

22.03. AUTOMATIC SPRINKLER SYSTEM

22.03.01. Installation

All high hazard occupancies will have automatic sprinkler protection or such other protection as may be appropriate to the particular hazard, including explosion venting for any area subject to a dust explosion hazard, designated to minimize danger to occupants in case of fire or other emergency before they have time to utilize exits of escape.

All gate valves in supply pipes to automatic sprinklers, whether or not of indicator or post pattern, should be sealed open in a satisfactory manner. All control, drain, test and alarm valves will be provided with identification signs of the standard design adopted by the automatic sprinkler industry, or their equivalent. Where corrosive conditions exist, types of pipe, tube, fittings, hangers, and protective coatings that resist corrosion should be used.

Where necessary to extend feed mains of wet pipe systems through an open area or through cold rooms, or passageways or other areas exposed to frost, the pipe will be adequately protected against freezing by insulating coverings, frost-proof casings, or other suitable means. Sprinklers which are so located as to be subject to mechanical injury (i.e., in either the upright or the pendent position) will be protected with approved guards.

When painting piping or painting in areas near sprinklers, the sprinkler may be protected by covering it with a paper bag which will be removed immediately after the painting has been finished. Sprinklers will not be painted and any sprinklers which have been painted, except for factory applied coatings applied for identification of temperature rating, will be replaced with new approved sprinklers.
Clearance of at least 36 inches will be maintained between sprinkler deflectors and the top of storage to reduce possibility of obstruction to the distribution of water.

22.03.02. Impairment of Sprinkler Protection

Before shutting off a section of the fire protection system to make sprinkler system connections, the authority having jurisdiction will be notified. The work will be planned carefully, and all materials assembled to enable completion in shortest possible time. Work started on connections should be complete without interruptions, and protection restored as promptly as possible. During the impairment, emergency hose lines, additional fire pails, and extinguishers will be provided, and additional extra watch services will be undertaken in the areas affected.

When change involves shutting off water from any considerable number of sprinklers for more than a few hours, temporary water supply connections should be made to the sprinkler system so that reasonable protection can be maintained. In adding to old systems or revamping them, protection should be restored each night so far as possible.

22.04. STANDPIPES AND HOSES

Inspections will be made frequently to assure that the hose is in proper position on the racks, and that all of the equipment is in place and in good condition. The hose will be removed and re-racked at intervals at least annually and new gaskets installed in the couplings, both at the hose valves and at the nozzles. Where couplings are polished, care will be taken to see that polish used does not touch fabric of hose.

22.05. MANUAL FIRE ALARMS

Manual fire alarm boxes will be approved for the particular application and will be used only for fire protective signaling purposes. Combined fire alarm and watchman’s signaling boxes are acceptable. (i.e., See the 2003 Edition of the Life Safety Code).

Manual fire alarm boxes will be distributed throughout the protected area so that they are unobstructed, readily accessible, and located in the normal path of exit from the area. Additional boxes will be provided on each floor to obtain a maximum horizontal travel distance of 200 feet to the nearest box.

22.06. CARBON DIOXIDE AND DRY CHEMICAL FIRE EXTINGUISHING SYSTEMS
22.06.01. Safety Requirements

In any proposed use of carbon dioxide where there is a possibility that persons may be trapped in, or enter into atmospheres made hazardous by a carbon dioxide discharge, suitable safeguards will be provided to ensure prompt evaluation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms and breathing apparatus will be considered. Alarms should be provided to give positive warning of a discharge where hazards to personnel may exist. Such alarms should function to warn against personnel entry into hazardous areas as long as such hazards exist or until hazards are properly recognized.

22.06.02. Installation, Maintenance, and Testing

Local application systems will be designed, installed tested and maintained in accordance with related requirements in National Fire Protection Association No. 12. These systems will be maintained in fully operating condition at all times. At least annually, all carbon dioxide systems will be thoroughly inspected and tested for proper operation by a competent engineer or inspector.

22.06.03. Extent of Hazard

The hazard will be so isolated from other hazards or combustibles that fire will not spread outside the protected area. The entire hazard will be protected. The hazards will include all areas that are or may become coated by combustible liquids or shallow solid coatings such as areas subject to spillage, leakage, drippings, splashing, or condensation, and all associated materials or equipment such as freshly coated stock, drain boards, hood ducts, etc., that might extend fire outside or lead fire into the protected area.

22.07. EQUIPMENT DAMAGE AND ABUSE

Automatic closing devices on fire doors must NOT be damaged. Perhaps the single most important reference to life safety from fire, is the proper maintenance and use of stairway doors. Fire doors will NOT be wired, blocked open, chained in the closed position, or abused. Tampering with fire and emergency equipment could result in injury or death. It is an employee and student responsibility to keep all fire doors closed and to prevent abuse of equipment.

22.08. STORAGE ROOMS
All storage rooms, custodians closets, and other limited access areas are staff responsibility and will be kept clean and free of debris at all times.

22.09. ASH TRAYS

Ash trays will have rigid center or ridged rim to prevent cigarettes from falling on desks, tables, chairs, floors, beds, etc.

22.10. WASTEBASKETS

All wastebaskets will be of metal or fire resistant materials.

22.11. UNSAFE SMOKING PRACTICES

The cigarette and cigar in careless hands is a fire maker. Persons on college property will not:

1. Smoke in buildings, or other prohibited areas,
2. Toss a lighted cigarette on the floor or ground or from a vehicle,
3. Leave a cigarette burning unattended in an ash tray or on a table ledge, and
4. Place a burning cigarette in trash receptacle or trash chute.

22.12. HOLIDAY DECORATIONS

The danger of fire is great around holidays (e.g., the Christmas Holidays). The following safety measures will be observed.

1. When obtaining or prior to use of decorating materials care will be exercised to ensure they are flameproof or made of non-flammable material,
2. When obtaining Christmas trees other than the manufactured aluminum or other flameproof type, the following precautions will be observed:
   a. Ensure that they are fresh and not dried out. Obtain tree shortly before Christmas and dispose of it shortly after
Christmas,

b. Make fresh cut across trunk at base of tree and cut slits crosswise at the base just prior to mounting in stand,

c. Use tree stand equipped to hold water at base of tree and keep it filled while tree is mounted,

d. Inspect tree lights for condition and UL approval. Do not leave lights burning on tree over long periods of time, or when unattended, and

e. Do not use electrical toys or appliances under tree.

3. Electrical lights will not be used on metal trees. All gift wrapping material (e.g., tissue paper and ribbon) will be tightly stuffed in a box as gifts are unwrapped and the box removed from the premises as soon as gift opening is completed.

4. Decoration material will not be exposed to light bulbs, heater, or other sources of heat or flame.

5. Means to extinguish fire (e.g., water bucket, hose, or fire extinguisher) will be located close to decorated areas.

22.13. RESPONSIBILITIES OF FIRE MARSHAL

The Assistant Director of Plant Operations is designated the college’s Fire Marshal. This person is responsible for execution of all duties and responsibilities of these fire safety policies and procedures. In addition, the Fire Marshal will coordinate the activities for fire prevention and act as the planning agent with the local fire department and the State of Tennessee fire protection agencies.

22.14. PROCEDURE FOR REPORTING A FIRE

The Director of Campus Police will be notified of all fires regardless of size. Any person discovering a fire, regardless of type and size, will arouse all occupants by using local fire alarms, shouting, or by any other means provided; obtain assistance; and, on the main campus, immediately notify the Campus Police Office, and, as appropriate, the local fire department. There are several types of fire alarms in the college buildings; therefore, all persons using any of these buildings should familiarize themselves with the alarm system. All fires involving Walters State Community College property, as well as non-college property involved in fire that create a hazard to college property, will be reported by telephone or any other possible and expeditious means to the Campus Police, and, as
appropriate, to the local fire department.

When reporting a fire or other emergency, give the building name and location, the caller’s name, and any other information requested. Remain on the phone until released by the person that you are notifying. If the Campus Police Office is called prior to the local fire department, that office will notify the fire department.

22.15. EXITING BUILDINGS

22.15.01. Safety Exit Drills

Periodically, personnel in college buildings will take part in a fire drill and leave the buildings. During the drills the persons responsible for conducting the drill will observe the action of personnel and check the first aid and fire fighting equipment, including fire escapes and fire exits. Variation of drills should be held, such as blocked exits, and night and morning drills will be used to create a variety of what could be experienced during actual emergency. Coordination will be effected with the Director of Campus Police prior to conducting any drills. A minimum of 24 hours notice will be required of any drill. Upon conclusion of a fire evacuation drill, the person responsible for conducting fire drill will forward a report to the Safety Administrator.

22.15.02. Exiting Procedures

Before a fire occurs employees are to:

1. Know the location of all fire alarm stations in their building and how to activate them,

2. Know the location of the portable fire extinguishers and how to use them, and

3. Know the location of emergency evacuation routes and of alternate means of exit if needed.

On discovering a fire employees will (i.e., if safe to do so):

1. Sound the fire alarm immediately to alert occupants,

2. Shut all doors and windows in the immediate vicinity of the fire, and

3. Vacate the building by the nearest safe exit.
On hearing the fire alarm sound employees will (i.e., if safe to do so):

1. Raise window shades all the way,
2. Close all windows tightly,
3. Vacate the room, leaving the lights on and the door open, and
4. Vacate the building by the nearest safe exit.

NOTE: Elevators are not to be used for evacuation and all persons will evacuate the building.

Periodically, faculty will instruct students in the evacuation procedures to be used in the event of fire or other emergency (i.e., see Chapter 28 “Emergency Preparedness Plan” of this manual). Students will be informed of the location of Building Emergency Evacuation Plans and that it is their responsibility to know and understand the plans’ content.

22.16. FALSE FIRE ALARMS

The importance of using fire equipment properly must be stressed. Employees and students must be aware of the hazards of false fire alarms. These include:

1. Accidents,
2. Possible failure of persons to respond effectively in a real fire situation as a result of repeated false alarms,
3. College property damage,
4. Personal and fireman inconvenience, and
5. Time and money waste.

22.17. FIRE SAFETY INSPECTIONS

Systematic inspections to locate and eliminate fire hazards are an indispensable element of a fire safety program. The Safety Administrators will cause inspections to be made on a regularly scheduled basis of all facilities of the college.
22.18. INSPECTING AND TESTING FIRE ALARMS, SPRINKLER SYSTEMS, AND FIRE HYDRANTS

In order to ensure proper continuous operation of fire alarm and automatic sprinkler systems the Assistant Director of Plant Operations will cause each system to be tested on a periodic basis. The testing will be performed during the hours that will cause the least disruption to normal activity. Upon completion of each test a Fire Alarm Test Report or Sprinkler System Test Report will be filed in the Campus Security Office.

The Assistant Director of Plant Operations will cause each fire hydrant and standpipe system to be checked and tested at least once annually. The inspections, checking and testing, will include winterizing those hydrants subject to freezing. Test reports will be filed in the Plant Operations Office.

22.19. FIRE REPORTS

All fires, regardless of how minor or if burned out prior to discovery, will be reported to the Director of Campus Police. The Director of Campus Police will be notified immediately upon discovery of the fire. A report of all fires will be kept on file in the Campus Police Office. The report will contain a minimum of the location and cause of the fire, the amount and cost of damage, possible corrective measures, and any other general information concerning the fire.

As in the case of accident and injury reports, the information derived from these reports will materially assist the Safety Administrators in identifying those areas and conditions which are particularly hazardous. The report will be analyzed and, if possible, corrective action to eliminate the hazard will be taken immediately.

22.20. ALTERATIONS AND RENOVATIONS

In those structures altered or renovated, the Assistant Vice President of Facilities Management will ensure that unsafe conditions are not added but are eliminated in such structures. Prior to commencement of any alterations or renovations the following procedures will be followed:

1. Any alterations or renovations proposed will comply with all applicable fire codes and safety and health regulations,

2. Any plans and specifications related to such alterations or renovations will be coordinated with the Safety Administrator to assure compliance with all applicable safety and health codes,

3. During major alterations or renovations the Safety Administrator will periodically inspect the affected areas to ensure that applicable
safety and health codes are being complied with and that all possible safety precautions are being taken,

4. Any alterations or renovations performed by private construction companies or personnel other than Plant Operations employees, will conform to all regulations applicable to the work being done as adopted by Walters State Community College and all other state and federal agency regulations (e.g., those of the State Fire Marshal’s Office, State Health Department, Occupational Safety and Health Act, American National Standard Institute, and National Fire Protection Association),

5. All plans and specifications, including preliminary and final will be submitted to the Safety Administrator for review and approval, and

6. All plans and specifications will comply with the requirements of the State Fire Marshal and the Occupational Safety and Health Act.

22.21. FIRE LANES

Fire lanes on campus property must be kept clear in case of an emergency. These lanes are “Tow-Away-Zones” and the regulation will be enforced by the Campus Police Office. Particular emphasis will be given to street intersections to assure that parked vehicles will not interfere with rapid access to buildings by a fire truck.
CHAPTER 23
HAZARDOUS CHEMICAL RIGHT TO KNOW LAW

23.01. INTRODUCTION

23.01.01. General

Tennessee House Bill No. 731 Hazardous Chemical Right To Know Law (i.e., see Appendix 23.01.01.A) went into effect on January 1, 1987. The General Assembly’s intention in passing this legislation is to:

1. “Provide access to information regarding [hazardous] chemicals to enhance the ability of manufacturing and non-manufacturing workers to minimize hazardous exposure to such chemicals,

2. Provide information to emergency personnel to protect the public health, safety, and welfare, and

3. Provide information to citizens to enable them to make informed decisions regarding their safety, health, and welfare.”

The purposes of the following materials are to:

1. Provide information concerning the law,

2. Specify the impact on employees, students, and other individuals using college facilities that may be impacted by the law,

3. Outline the college’s compliance with the law and associated processes and procedures, and

4. Ensure employers and employees know about work hazards and how to protect themselves; thus reducing the incidence of chemical source illness and injuries.

The Tennessee Hazardous Chemical Right To Know Law is stated in the Tennessee Code Annotated, Title 50, Chapter 3, Part 20 (50-3-20) (i.e. See Appendix 2.01.00.A). The law was derived from the OSHA (i.e., Occupational, Safety, and Health Administration) 1910.1200 - Hazard Communication Standard. The Tennessee law empowered the state to enforce the provisions of the standard to non-manufacturing employers as well as to manufacturing employers. OSHA has published a Chemical Hazard Communication Guide (OSHA 3084 – Appendix 23.01.01.B) to establish
uniform requirements to make sure that the hazards of all chemicals imported into or used in the workplace are evaluated, and that this hazard information is transmitted to affected employers and exposed employees.

23.02. RESPONSIBILITIES

23.02.01. Safety Administrators

The college’s Safety Administrators are responsible for assuring the institution’s compliance with the Hazardous Chemical Right To Know Law. The Safety Administrators are responsible for ensuring:

1. Appropriate work area chemical lists and MSDSs are maintained in a current manner in all work areas of the college where an employee may be exposed to hazardous chemicals under normal operating conditions or foreseeable emergencies,

2. A master copy of all work area chemical lists and associated MSDSs are maintained in a current manner in the Campus Security Office,

3. Two master copies of all MSDSs are maintained in a current manner in alphabetical product/trade name order within alphabetical name order of the manufacturer/distributor/supplier (i.e., one master copy in the Campus Security Office and the other copy in the Shipping and Receiving Department),

4. Appropriate education and training programs are provided to employees,

5. Notices informing employees about their rights under the Act are posted where notices are normally posted,

6. Labels on containers of hazardous chemicals have not been removed or defaced and that such labels are appropriate,

7. Warnings are posted for hazardous chemicals produced in the work area (e.g., carbon monoxide and welding fumes),

8. A workplace (i.e., for the main campus, off-campus center, etc.) hazardous chemical list containing the required information for each hazardous chemical normally used or stored in excess of fifty-five (55) gallons or five hundred (500) pounds is filed with the local fire chief and the assistant director of TOSHA (i.e.,
Tennessee Occupation Safety and Health Administration). Such lists will be updated as necessary but not less than annually,

9. Appropriate signs are placed on the outside of any building that contains hazardous chemicals as defined in the Tennessee Hazardous Chemical Right To Know Law Section 14(f),

10. A copy of the MSDS for any chemical on the workplace chemical list is provided to the fire chief upon written request, and

11. The fire chief or his representative is permitted on site inspections of the hazardous chemicals on the workplace chemical list during normal business hours for the sole purpose of pre-planning emergency fire department activities.

23.02.02. Employees

All full-time and regular part-time employees must be knowledgeable of the Hazardous Chemical Right To Know Law and the college’s Written Hazard Determination and Communication Programs to comply with this law. Employees must participate in the college’s Hazardous Chemical Right To Know Law education and training program and annual refresher training programs.

Employees must be trained in the safety knowledge available on all substances they come in contact with under normal operating conditions or foreseeable emergencies. Employees must know the location of the work area chemical list and Material Safety Data Sheets (MSDSs) of the hazardous chemicals they come in contact with under normal operating conditions or foreseeable emergencies.

Employees should be able to recall in simple language the following basic information about each hazardous material in their work area:

1. What hazardous chemical(s) the employee comes into contact with under normal operating conditions or in a foreseeable emergency,

2. Where is the chemical present?,

3. Effect on the body,

4. Detection, and

5. Protection.
Also, employees should be able to recall in simple language basic information about the college’s Written Hazard Determination and Communication Programs.

Employees that remove hazardous chemicals from the original containers to unlabeled, temporary containers must use the chemicals within one work shift (i.e., 7-1/2 hours) or:

1. Transfer the hazardous chemical back to the original container, or
2. Label the temporary container with hazard information similar to the original container (i.e., see Section 23.04.02 “Labels and Other Forms of Warning” of this manual).

The Hazardous Chemical Right To Know Law requires that MSDS’s be made accessible to students. Thus, faculty instructing students where hazardous chemicals are used (e.g., in labs) will inform students of the location of MSDS’s and other associated materials explaining the law and its requirements.

23.02.03. Supervisors

Supervisors will ensure all regular full-time and part-time employees under their direct supervision:

1. Participate in the college’s Hazardous Chemical Right To Know Law education and training program and annual refresher training programs, and
2. Adhere to the college’s requirements to comply with the Hazardous Chemical Right To Know Law.

Supervisors will ensure the work area chemical list/s and associated MSDSs are maintained in a current manner if their employees may be exposed to hazardous chemicals under normal operating conditions or foreseeable emergencies in the work areas that are the responsibility of the supervisor. Supervisors will ensure all labels on containers of hazardous chemicals have not been removed or defaced and that such labels are appropriate.

23.02.04. Contractors and Subcontractors

A contractor or subcontractor who introduces hazardous materials into college facilities/property will be responsible, for the purposes of this Act, for his employees in such workplaces. Contractors and subcontractors will comply with the duties and responsibilities of contractors and subcontractors under this Act as established by the
commissioner of the department of labor. A contractor or subcontractor who introduces hazardous chemicals into college facilities/property must provide MSDSs for such chemicals to all other parties of the contract prior to introducing such hazardous chemicals.

23.03. WRITTEN HAZARD DETERMINATION PROGRAM

23.03.01. Material Safety Data Sheet

Entries in the hazardous ingredients section of the material safety data sheet (i.e., see Appendix 23.04.05.A) provide the necessary information to determine if a chemical is hazardous or not. For those chemicals that have not been declared hazardous by the manufacturer, a statement to this effect will be provided in place of a MSDS.

23.03.02. Other Determination

In those instances when a MSDS is not available to determine if a chemical is hazardous (e.g., chemicals created in a laboratory), the definition of hazardous chemical as specified in the Tennessee Hazardous Chemical Right To Know Law Section 3(11) will be used. The law states:

“Hazardous chemical” means any element, chemical or mixture of elements and/or compounds which is a physical hazard or health hazard as defined by OSHA standard in 29CFR Section 1910.1200(c) or a hazardous substance as defined by OSHA standard in 24CFR Section 1910.1200(d).

23.04. WRITTEN HAZARD COMMUNICATION PROGRAM

23.04.01. General

The institution’s Safety Administrators are responsible for the communication to employees and maintenance of the college’s written hazard determination and communication programs and the college’s compliance with the Tennessee Hazardous Chemical Right To Know Law.

23.04.02. Labels and Other Forms of Warning

Existing labels on containers of hazardous chemicals will not be removed or defaced. When a hazardous chemical is transferred from the original container to another container and the chemical is to be stored in the additional container for a period in
excess of one work shift (i.e., 7 ½ hours), an appropriate label will be created and affixed to the additional container. The label to be used is shown below (Diagram 23.04.02.A) and the associated label classification information is shown below (Diagram 23.04.02.B). The required details for the label will be obtained from the MSDS. The label classification information will be made readily available to employees. Employees will not be required to work with a hazardous chemical from an unlabeled container except from a temporary container intended for the immediate use by the employee who placed the hazardous chemical into the temporary container.

Appropriate warnings will be posted for hazardous chemicals (e.g., carbon monoxide and welding fumes) produced in the work area. Relevant signs will be placed on the outside of any building that contains hazardous chemicals as defined in the Tennessee Hazardous Chemical Right To Know Law Section 14(f). Notices informing employees about their rights under the Tennessee Law will be posted where notices are normally posted.
23.04.03. Workplace Chemical List

A workplace chemical list will be maintained for the college’s main campus and each of the off-campus centers. Each workplace chemical list will comprise of a list of all chemicals for each work area within the particular geographical location of college facilities.

A listing of chemicals is not required for those work areas (e.g., offices) in which all of the chemicals are:

1. Non-hazardous, or
2. Hazardous but -
   a. in small containers, and
   b. used infrequently, and
   c. obtained from general retail stores.
However, in such instances the appropriate supervisor will complete a chemical list indicating that there are not any hazardous chemicals in the work area.

The chemical list for each work area will be made readily available to all employees of the work area.

The format of the chemical list is shown in Appendix 23.04.03.A. The location of the work area is stated at the top of the list and is titled Work Area. Column 1 of the chemical list includes:

1. Product and/or trade name (i.e., according to product container label),
2. And/or chemical name (i.e., if applicable),
3. Manufacturer name,
4. List of each ingredient contained in each product, and
5. Chemical abstract service (i.e., CAS) number of each ingredient.

Each chemical list is alphabetized according to product or trade name (i.e., label identity). Column 2 of the chemical list is provided to indicate that a particular product or ingredient has been determined hazardous. If the chemical is hazardous, this column will be given a check mark (√). Column 3 is provided to indicate that a particular product or ingredient has not been declared hazardous by the manufacturer. If the chemical is not hazardous, this column will be given a check mark (✓). The person responsible for generating the chemical list will sign the form at the bottom together with the date. Also, appropriate page number details will be entered on the bottom of the form.

23.04.04. Workplace Hazardous Chemical List

A workplace hazardous chemical list will be maintained for the college’s main campus and each of the off-campus centers if the hazardous chemicals are normally stored in excess of fifty-five (55) gallons or five hundred (500) pounds.

The workplace hazardous chemical list will be updated at least annually and filed with the local fire chief and the assistant director of TOSHA (i.e., Tennessee Occupation Safety and Health Administration).

The workplace hazardous chemical list is shown in Appendix 23.04.04.A.

23.04.05. Material Safety Data Sheet (MSDS)
Appropriate material safety data sheets for each hazardous chemical to which employees come in contact with under normal operating conditions or foreseeable emergencies will be obtained and made readily available to such employees. However, MSDSs may not be made available for products that are:

1. In small containers (e.g., such as spray cans), and
2. Used infrequently, and
3. Obtained from general retail stores.

For those products that have not been declared hazardous by the manufacturer a statement to this effect will be made available in place of a MSDS. For a hazardous chemical produced in the work area, either the appropriate employee/s will create the necessary MSDS (e.g., for a chemical produced in a laboratory) or a Safety Officer is to obtain the needed MSDS (e.g., carbon monoxide MSDS obtained from the Department of Labor).

OSHA's Hazard Communication Standard (HCS) specifies certain information that must be included on MSDSs, but does not require that any particular format be followed in presenting this information (see 29 CFR 1910.1200 (g)). In order to promote consistent presentation of information, OSHA recommends that MSDSs follow the 16-section format established by the American National Standards Institute (ANSI) standard for preparation of MSDSs (Z400.1). The MSDS form shown in Appendix 23.04.05.A, may be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

23.04.06. MSDS Manual Maintenance Procedures

Copies of all MSDS sheets are kept in Shipping and Receiving Department and a copy is kept in Campus Security. Copies are also sent to the Department receiving said item.

We are currently working on updating and changing the method of MSDS Manual Maintenance Procedures.

23.04.07. Employee Information and Training

All full-time and regular part-time employees will be provided with information and training on hazardous chemicals in their work area. New employees will be provided with such information and training during their indoctrination process. See Appendix 23.04.07.A for memorandum regarding New Employee Orientation and Hazardous Chemical Right to Know Law.
Employees will be informed of:

1. The requirements of the Tennessee Hazardous Chemical Right To Know Law,

2. Any operations in their work area where hazardous chemicals are present, and

3. The location and availability of the college’s written hazard communication program, including list(s) of hazardous chemicals and associated material safety data sheet (MSDSs).

Employee training will include video presentations and verbal and written instructions concerning:

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area,

2. The physical and health hazards of the chemicals in the work area,

3. The measures employees can take to protect themselves from these hazards,

4. The details of the hazard communication program developed by the college, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information, and

5. General safety instructions on the handling, cleanup, and disposal of hazardous chemicals.

Annual refresher training programs will be provided to employees. Records of group employee training and education programs will be maintained by the Safety Administrators. Individual employee training and education program participation will be recorded in the employee’s personnel file. A list of videos, concerning the hazard communication program, available for review through the CCTV, is shown in Appendix 23.04.07.B.
CHAPTER 24
HAZARDOUS MATERIALS

24.01. GASES, VAPORS, FUMES, DUSTS, AND MISTS

24.01.01. General Control Measures

Exposures by inhalation, ingestion, skin absorption, or contact to any material or substance will be avoided or protective equipment will be provided. Feasible administrative or engineering controls such as work rotation, time limitations, process or local exhaust ventilation and/or process isolation, must first be determined and implemented in all cases. In those situations where protective equipment or protective equipment in addition to other measures is used as the method of protecting the employee, such protection must be approved for each specific application by a competent industrial hygienist or other technically qualified source.

24.01.02. Dangerous or Potentially Dangerous Atmospheres

Before employees are initially permitted to enter any confined work space (e.g., tank, underground structure, vat, etc.), the atmosphere within the space to be entered will be tested by a competent person to determine the concentrations of flammable vapors or gases, toxic atmospheric contaminants, and oxygen. If such tests indicate that the atmosphere in the space to be entered contains the following, appropriate control measures will be instituted.

1. A concentration of flammable vapor or gas greater than 10 percent of the lower explosive limit, and/or

2. A concentration of toxic contaminants above the threshold limit value, and/or

3. Less than 6.5 percent oxygen.

Control measures may consist of forced or natural ventilation, use of personal protective equipment, administrative controls, or a combination of these and other effective control techniques. In those circumstances where a man must enter an area before a safe level is achieved, such as setting up ventilation equipment, etc., approved personal protective equipment for the hazards involved will be provided and worn.

In all cases when an employee is stationed outside a compartment tank, or space as a tender for the individuals working inside, the employee will have immediately available for emergency use all necessary personal protective equipment equivalent to
that required for the individuals inside. The employee will wear the personal protective
equipment if he/she is exposed for prolonged periods which are hazardous to the
employee’s health. Employees entering a toxic or flammable atmosphere will be provided
with and use an adequate, attended lifeline.

24.02. COMBUSTIBLE DUST

Measures for the control of combustible dusts will be provided. Where
combustible dust accumulates or is present in suspension in the air, electrical installations
and equipment will be suitable for use in atmospheres containing the combustible dust.
(i.e., See National Electrical Code - Article 502). Precautions will be taken to minimize
the possibility of ignitions by static electrical sparks, through static grounding of
machines or equipment, grounded metal comb for belts, humidification or other effective
means. Equipment will be made dust tight with minimum interior volume and adequate
pressure relief to the outside of the building.

24.03. OXIDIZING AGENTS

Oxidizing agents will be stored only in rooms or buildings of fire resistive
construction. They will be separated from supplies of fuels, flammable materials, and
acids until the process requires their corporation. Solutions of oxidizing agents will be
placed only in non absorbent and non-combustible containers. Residue in discarded
containers will be burned out in the open and the container will not be revised. Spills of
oxidizing agents must be cleaned up immediately, and will not be salvaged.

Employees handling oxidizing agents should wear flameproof clothing as
minimum protection. The college-provided clothing will be stored in metal containers
when it becomes contaminated. College-provided clothing will be laundered frequently to
minimize the hazard.

24.04. FLAMMABLE AND COMBUSTIBLE LIQUIDS

24.04.01. Definitions

Per N.F.P.A. 30, Flammable liquids are defined as any liquid having a flash point
of below 100 F. and having a vapor pressure not exceeding 40 pounds per square inch
(absolute) at 100° F. They are divided into two classes as follows: Class I liquids includes
those having flash points below 100° F. and may be subdivided as follows:

1. Class IA includes those having flash points below 73° F. and having a
   boiling point below 100° F.,
2. **Class IB** includes those having flash points below 73° F. and having a boiling point at or above 100° F.,

3. **Class IC** includes those having flash points at or above 73° F. and below 100° F., and

4. **Class II** includes those having flash points at or above 100° F. and below 140° F.

5. **Class III** includes those with flash points at or above 140° F. (60° C.) and below 200° F. (93.3° C).

Note: The volatility of liquids increase when artificially heated to temperatures equal to or higher than their flash points.

When so heated Class II and III liquids will be subject to applicable requirements for Class I or II liquids. This code may also be applied to high flash point liquids when so heated even though these same liquids when not heated are outside of their scope.

Combustible liquid means any liquid having a flash point at or above 140° F., and will be known as Class III liquids. Class IIIA includes those having flash points at or above 140° F. and below 200° F. This code does not cover Class IIIB liquids. Where the terms combustible liquids or Class III liquids are used in this code, it means only Class IIIA liquids.

Note: The upper limit of 200° F. is given because the application of this code does not extend to liquids having flash points above 200° F. and should not be construed as indicating that liquids with high flash points are non-combustible.

24.04.02. Sources of Ignition

In locations where flammable vapors may be present precautions will be taken to prevent ignition by eliminating or controlling sources of ignition. All electrical equipment and wiring will be of a type specified by, and will be installed in accordance with the National Electric Code, (i.e., N.F.P.A. 70). To prevent ignition from static electricity, flammable liquids will not be dispensed unless the nozzle and container are electrically interconnected. Smoking will be prohibited except in designated localities. "NO SMOKING" signs will be conspicuously posted where hazard from flammable liquid vapors is normally present. Heating will be by steam or hot water only. Open flames will not be permitted in flammable or combustible liquid storage areas. Hot work such as welding or cutting operations, use of spark-producing tools, and chipping operations will be permitted only under supervision of a responsible individual in charge. The individual in charge will make an inspection of the area to be sure that it is safe for the work to be done and that safety procedures will be followed for the work specified. Additional information on fire prevention and protection as well as specific supervisory responsibilities for safety of hot work is outlined in National Fire Protection Association, Section 51B. This information should be reviewed and applied as applicable.
24.04.03. Storage

Flammable or combustible liquids will be stored in tanks or closed containers, approved for the specific purpose by class of liquid, volume, and location. Reference will be made to the basic code for situations not covered below.

1. **Portable Containers** - Safety cans will be used as containers for the storage and/or handling of flammable liquids in quantities of 5 gallons or less.

2. **Drum Storage** - Metal drums acceptable for the interstate shipment of flammable liquids will be used for the storage and/or handling of flammable liquids in quantities of more than 5 gallons but less than 60 gallons.

3. **Storage Limitations Outside of Cabinets** - Not more than 25 gallons of flammable liquids will be stored outside of a storage cabinet or inside storage rooms.

4. **Storage Cabinets** - Not more than 60 gallons of flammable liquid will be stored in a storage cabinet.

5. **Inside Storage Rooms** - Flammable liquids in excess of 60 gallons will be stored outside or in an inside storage room having a fire resistance of at least 1 hour, sills at all openings of at least 4 inches in height, liquid tight floors, electrical equipment, if any, suitable for hazardous locations, a gravity or mechanical exhaust ventilation system, and portable fire extinguishing equipment having a rating of at least 20 B:C.

6. **Tank Storage** - Storage tanks will be adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying, or atmospheric temperature changes. Emergency venting will be provided that will relieve excessive internal pressure caused by exposure to fires.

   Special extinguishing equipment will be provided as the need is indicated by the special hazards of operation, dispensing, or storage.

   Above ground tanks and containers will be protected by drainage, dikes, or walls to prevent accidental discharge of liquid from endangering property. Tank supports will be installed on firm foundations. Tank supports will be of concrete, masonry, or
protected steel.

Each connection to a tank inside of buildings through which liquid can normally flow will be provided with an internal or an external valve located as close as practical to the shell of the tank. Tanks will be provided with an automatic-closing heat-actuated valve on each withdrawal connection below the liquid level, except for connections used for emergency disposal, to prevent continued flow in the event of fire in the vicinity of the tank.

Storage tanks inside of buildings will be permitted only in areas at or above grade which have adequate drainage and are separated from the processing area by construction having a fire resistance rating of at least 2 hours.

7. Container Storage - Storage buildings located less than 50 feet from another building will have the exposing wall blank and of a fire resistance rating of at least 2 hours. The arrangement of storage will comply with the Occupational Safety and Health Act Code of Federal Regulations, Part 1910.106(d). Containers in piles will be separated by pallets or dunnage where necessary to provide stability and to prevent excessive stress on container walls. No pile will be closer than 3 feet to the nearest beam, chord, girder, or other obstructions, fire protection equipment, or fire door. Aisles at least 3 feet in width will be provided where necessary for access to doors, windows, or fire protection equipment.

Storage outside buildings will be in accordance with Table H-16 or H-17, and subdivisions (ii) and (iv) of OSHA Part 1910.106(d) (6)(i) (See Appendix 24.04.03.A.). Storage areas will be protected against tampering or trespassers and will be kept free of weeds, debris, and other combustible materials not necessary to the storage.

At least one portable fire extinguisher having a rating of not less than 12-B units will be located not less than 10 feet, or more than 25 feet, from any flammable liquid storage area.

24.04.04 Handling

Equipment will be designed and arranged to prevent the unintentional escape of liquids and vapors and to minimize the quantity escaping in the event of accidental release. Flammable or combustible liquids will be kept in closed containers when not in use, and transferred into vessels or containers within buildings only through a closed piping system, from safety cans or by means of a device drawing through an approved
self-closing valve. Transferring by means of air pressure on the container will be prohibited. Areas in which flammable or combustible liquids are transferred from one tank or container to another will be separated from other operations by at least 25 feet or by construction having a fire resistance of at least 1-hour.

24.04.05. Ventilation

Enclosed buildings will be ventilated at a rate of not less than one cubic foot per minute per square foot of solid floor area. Ventilation will be arranged to include all floor areas and pits where flammable vapors may collect.

24.04.06. Piping Systems

Piping systems will be substantially supported and protected against physical damage and excessive stresses arising from settlement, vibration, expansion, or contraction. Joints will be liquid tight. Piping systems will contain a sufficient number of valves to control properly the flow of liquid in normal operation and in the event of physical damage.

24.04.07. Spillage and Drainage

Where flammable or combustible liquids are used or handled, means will be provided to dispose promptly and safely of leakage or spills. Emergency drainage systems, if connected to public sewer or discharged into public waterways, will be equipped with traps or separators. Portable fire extinguishment and control equipment will be provided in such quantities and types as are needed for the special hazards of operation and storage.

24.05. ACIDS, CAUSTICS, AND OTHER HARMFUL SUBSTANCES

24.05.01. Carboys and Drums

Carboys will be provided with inclinators, or the acid will be withdrawn from the carboys by means of pumping without pressure in carboy, or by means of hand operating siphons. Carboys and drums will be stored in a cool, dry place away from the direct rays of the sun and from heat source. Empty carboys will be inverted and drained thoroughly. Carboys containing acids should be elevated from the floor to keep the bottom of the crates dry and prevent them from rotting. Carboys may be stored in tiers not over two high provided the bottoms of the upper row do not touch the glass neck or the wooden hoods of the lower carboys. At least one side of each carboy must be exposed to permit
detection of leakages. Generally, when carboy shipments are received, the stoppers will be loosened carefully and then retightened.

24.05.02. Safety Measures

Face shields, aprons, and rubber gloves will be provided for workers handling acids or caustics. Suitable facilities for quick drenching or flushing of the eyes and body will be provided within 25 feet of the work area and kept accessible for immediate emergency use.

Acid handling buildings should be built of materials not affected by fumes and gases which are produced. Floors should be of acid-resisting material sloped to drains connected with catch basins. Wood and other carbonaceous materials should be limited to a minimum.

24.06. COMPRESSED AND/OR LIQUEFIED GASES

24.06.01. Cylinder Storage

Storage rooms should be dry, cool, and well ventilated with enclosures having a fire resistance of at least 1 hour. Where flammable gases are stored, the storage room will have all electrical equipment and wiring installed and maintained in accordance with Article 501 of the National Electrical Code. Cylinders will be grouped by types of gas and the groups segregated as to compatibility. Charged and empty cylinders will not be stored at temperatures above 125°F in direct sunlight, or subjected to artificially created low temperatures. Oxygen cylinders will be separated from fuel gas cylinders a minimum distance of 20 feet or by a non-combustible partition having a fire resistance of at least 1 hour. Cylinders will not be stored near combustible substances. Cylinders will be properly supported to prevent them from being knocked over. Cylinders should be protected against tampering and damage.

Where removable caps are provided for valve protection, such caps will be kept on cylinders at all times except when cylinders are in use. Cylinder valves will be kept closed except when the cylinder is in active use. Cylinders should be constructed and maintained in accordance with Department of Transportation requirements.

24.06.02. Bulk Storage

Bulk storage containers will be constructed and tested in accordance with appropriate requirements of the American Society of Mechanical Engineers Code, sub-part H or the Federal Register, sub-part C (Department of Transportation) as applicable. Containers will be equipped with safety release devices where applicable (i.e., exception:
poison gas, fluorine, etc.).

Bulk storage systems will be located above ground outdoors and at least 50 feet away from combustible structures, or at least 10 feet away from any opening in adjacent walls of fire resistive structures or will be installed in a building of non-combustible construction, adequately vented and used for that purpose exclusively. The location selected will be such that containers and associated equipment will not be exposed by electric power lines or adjacent combustibles. Small quantities of compressed gases may be stored in specially constructed storage areas, see specific gas for limitations.

Permanently installed containers will be provided with substantial non-combustible supports on firm non-combustible foundations. Piping systems will comply with the related requirements outlined previously.

24.06.03. Liquefied Petroleum Gases (Flammable)

Containers and first stage regulating equipment, if used, will be located outside of buildings (i.e., exceptions provided). Each individual container will be located with respect to the nearest important building or group of buildings in accordance with Table H-3 and H-4 OSHA Part 1910.103(c) (See Appendix 24.04.03.A.). Filling of fuel containers for industrial trucks will be performed outdoors not less than 25 feet from a frame building or wall opening.

24.06.04. Anhydrous Ammonia (Flammable)

Containers will be located outside of buildings or in buildings or sections thereof especially provided for this purpose.

24.06.05. Acetylene (Flammable)

Acetylene will not be generated, piped, or utilized at a pressure in excess of 15 pounds per square inch gage (i.e., 30 pounds per square inch absolute). Acetylene cylinders should be stored and used in an upright position. Quantities of acetylene exceeding 2000 cubic feet will be stored in a special building or separate, specially constructed room, having a fire resistance of at least 1 hour. At least one wall will be an exterior wall.

24.06.06. Hydrogen - Liquefied (Flammable)

The location of liquefied hydrogen storage will be in accordance with Table H-3 and H-4 OSHA Part 1910.103(c) (See Appendix 24.04.03.A.). Special storage rooms will have fire resistance of at least 2 hours. Openings into other parts of the buildings are
prohibited. At least one wall will be an exterior wall with explosion venting.

24.06.07. Oxygen - Non-Medical

Oxygen cylinders will be separated from fuel gas cylinders or combustible materials a minimum distance of 20 feet or by a non-combustible barrier at least 5 feet high and having a fire resistance rating of at least 1/2 hour.

24.06.08. Chlorine

Chlorine gas is poisonous, corrosive, and destructive. If not properly handled, it can be both dangerous and extremely hazardous to human beings and property. It is the duty and obligation of every user of chlorine to make certain that all persons having anything to do with it are thoroughly familiar with safe handling procedures.

Cylinders should be stored upright in a separate room, which should be cool, dry, fireproof, and provided with an exhaust fan located near the floor level. Two means of exit, as remote from each other as possible, should be provided from each separate room or building in which chlorine is stored, handled, or used. The use or storage of chlorine below ground level should be avoided, is possible, but when such conditions cannot be avoided, it is essential to provide forced ventilation with the intake located at the floor level. Never store containers near combustible or flammable materials. Keep cylinders away from radiators or steam pipes and other sources of direct heat. Never store containers near turpentine, ether, anhydrous ammonia, finely divided metals, and hydrocarbons, and other flammable materials. Containers should not be stored where they are exposed to continuous dampness. Do not store containers in locations where heavy objects may fall and/or strike them. Never store containers or place leaking containers where the fumes can enter a ventilating system.

Chlorine containers must be handled carefully to guard against accidental discharge of their contents. Valve protection bonnets should always be kept in place except when containers are being emptied. Do not drop containers nor allow them to strike any other object with force. Full and empty chlorine containers should be segregated to avoid confusion in handling. Use containers in the order in which they are received. Never tamper with the safety devices on containers.

Open container valves slowly; using only the special wrench provided by the supplier. One to one-and-one quarter turns of the valve stem in a counter clockwise (i.e., left hand) direction will open the valve sufficiently to permit maximum discharge. Alteration or repair of containers or valves should never be attempted by the consumer. As soon as containers are empty, close their valves, disconnect, and test for chlorine leakage at the valve outlets. If no leakage is indicated, promptly apply cap nuts to valve outlets and attach valve protection bonnets securely in their proper places. These fittings
should always be kept in place except when the container is being emptied.

Canister gas masks of a type approved by the U.S. Bureau of Mines for chlorine service or self-contained oxygen breathing apparatus should always be readily available where chlorine is being stored, transported, or used. Gas masks and emergency kits should be located outside the probable area of contamination so that it will be possible to reach them in case of an emergency. In case of fire, remove chlorine containers from the fire zone immediately. If it is impossible to remove containers from the fire area, notify all firefighting personnel that chlorine containers are in the fire area. Prompt treatment of persons exposed to chlorine is of the utmost importance. **OBTAIN MEDICAL ASSISTANCE AS SOON POSSIBLE.**

24.06.09. Fittings and Connections

Special attention will be directed to special restrictions for certain gases which prohibit the interchange of fittings and hoses. Special threads and connections are designed for specific gases and equipment. Never force connections that do not fit. Threads on regulator connections must be the same as those on the cylinder valve outlet.

24.07. SPRAY FINISHING USING FLAMMABLE OR COMBUSTIBLE LIQUIDS, COMBUSTIBLE POWDERS, OR OXIDIZING MATERIALS

24.07.01 Facilities

Spray finishing operations should be separated from other areas by construction having a fire resistance of at least 2 hours and provided with automatic sprinkler protection. Spray finishing operations should be confined to properly constructed spray booths, rooms, or tunnels. Spray booths will be substantially constructed of steel, concrete, or masonry with interior surfaces smooth and continuous without edges and otherwise designed to prevent pocketing of residue and facilitate cleaning. Space within spray booth having a frontal area greater than 9 square feet should be protected with automatic sprinkler. A clear space of at least 3 feet around spray booths will be maintained.

There will be no electrical equipment in any spraying area subject to deposits of combustible residues. Electrical equipment located in spraying area or within 20 feet of a spraying area will be installed and maintained in accordance with Chapter 5 of the National Electrical Code.

All spraying areas will be kept from the accumulation of deposits of combustible residues. Sprinklers protecting spraying areas will be maintained free of deposits. If there are excessive accumulations of residue in booths, ducts, dust discharge points or other spraying areas, then all spraying operations should be discontinued until conditions are
corrected.

All spraying areas will be provided with mechanical ventilation adequate to remove flammable vapors or mists to a safe location and to confine and control combustible residues so that life or property is not endangered.

24.07.02 Flammable and Combustible Liquid Storage

The quantity of flammable or combustible liquids kept in the vicinity of spraying operations will not exceed the minimum required for a single shift. Original shipping containers will not be subjected to air pressure for supplying spray nozzles.

24.08. SURFACE PREPARATION AND PRESERVATION

24.08.01. Steam Cleaning

All employees within range of the blast will be protected by suitable face shields. Metal parts of the steam gun will be insulated to protect the operator.

24.08.02. Toxic and Flammable Cleaning Solvents

When toxic solvents are used, one or more of the following measures will be employed to safeguard the health of employees exposed to these solutions.

1. The cleaning operation will be completely enclosed to prevent the escape of vapor into the working space,

2. Either natural ventilation or mechanical exhaust ventilation will be used to remove the vapor at the source and to dilute the concentration of vapors in the working space to a concentration which is safe for the entire work period, and/or

3. Employees will be protected against toxic vapors by suitable respiratory protective equipment in accordance with previous requirements and, where necessary, against exposure of skin and eyes to contact with toxic solvents and their vapors by suitable clothing and equipment.

24.08.03 Chemical Paint and Preservative Removers
Employees will be protected against skin contact during the handling and application of chemical paint and preservative removers and will be protected against eye injury by goggles or face shields. Precautions will be taken in accordance with the requirements previously outlined. When using chemical paint and preservative removers which contain volatile and toxic solvent, such as benzol, acetone, and amylacetate, appropriate face and eye protection will be used. When using paint and rust removers containing strong acids or alkalines, employees will be protected by suitable face shields to prevent chemical burns on the face and neck.

24.09. MECHANICAL PAINT REMOVERS

Employees engaged in the removal of paints, preservatives, rusts, or other coatings by means of power tools will be protected against eye injury by goggles or face shields. All employees using portable rotating tools for the removal of paints, preservatives, rusts, or other coatings will be protected by respiratory protective equipment. Flame or heat will not be used to remove soft and greasy preservative coatings.

24.10. DRYING EQUIPMENT

Industrial ovens and furnaces will be safety located and protected from exposure to dip tanks, spray booths, storage or handling of flammable liquids, gases or solids, or exposure to the diffusion of flammable air-vapor mixtures. The use of combined dipping and baking, or spraying and baking units is permissible when adequately ventilated and inter-locked. Ovens will not adjoin recreational areas, lockers, lunchrooms, etc., and will not obstruct means of egress.

Ovens which may contain flammable air-gas mixtures will be equipped with unobstructed relief vents for freely relieving internal explosion pressures. Explosion relief vents should be located so that employees will not be exposed to injury. Ovens in which flammable or toxic vapors are liberated will be mechanically ventilated to outdoor atmosphere regardless of the type of heating equipment involved.

All ovens or dryers processing flammable materials, those involving flammable vapors, or heated with combustible fuels, as well as all auxiliary apparatus in close proximity to the oven dryers, will be protected with fuel safety devices, ventilation controls, oven-temperature controls, interlocks, etc., to properly safeguard the process. Ovens containing or processing combustible materials will be equipped with automatic sprinkler protection.
25.01. INTRODUCTION

25.01.01. Objectives

The proper disposal of chemical wastes is essential to the health and safety of Walters State Community College personnel as well as to the surrounding community. It is imperative, therefore, to dispose of all chemicals in a safe, efficient, and cost-effective manner. To achieve these goals, the following procedures have been developed to help college personnel provide for the safe and proper disposal of chemical waste. The objectives of these procedures are:

1. To maintain a healthful and safe work environment through scheduled, periodic removal of chemical waste from Walters State facilities,

2. To aid in assuring the health and safety of the surrounding community by disposing of chemical waste in compliance with local, state and federal regulations, and

3. To reduce cost of chemical waste disposal through proper identification and disposal procedures.

With a cooperative effort on the part of the Walters State Community College faculty and staff, and through adherence to the procedural guidelines contained herein, the attainment of these objectives can be realized.

25.01.02. Functions and Responsibilities

The management of hazardous chemical waste at Walters State consists of the coordination and direction of the waste generated in laboratories and other campus facilities. To manage this program effectively, it is necessary to use the services and technical expertise of specialized external agencies and faculty and staff members. This part briefly describes the function of each group and its relation to hazardous chemical waste management.

1. Walters State Community College - The president of the college is responsible for the administration of policy pertaining to institutional safety and health related matters. The president oversees the administration of safety policies through the normal
chain of authority within the institution, delegating to deans, department chairpersons, and supervisors, the responsibility for ensuring safe work practices of those under their supervision and adherence to established policy and guidelines.

2. **College Development and Safety & Health Committee** - This committee advises the president and deans on matters pertaining to chemical safety within the college. The committee periodically reviews safety guidelines and the chemical safety educational activities of the college. The committee also advises the Safety Administrator on issues relating to the criteria for development and implementation of new chemical and biological safety programs.

3. **The Safety Administrators** are responsible for facilitating surveillance of all laboratory activities involving the use of toxic agents and all additional chemical and biological problem areas within the confines of the college. Specific duties of the Safety Administrators include:

   a. Implementation of policies set by the College,

   b. Design and improvement of disposal procedures for chemical waste materials,

   c. Preparation, submission and maintenance of records, reports, and manifests as required by government regulations,

   d. Preparation of applications for state and federal permits to generate and properly dispose of hazardous chemical waste, and

   e. Assuring that college policy and guidelines regarding proper disposal of hazardous chemical waste are followed.

4. **The Laboratory Worker and Other Individuals** - The success of the hazardous chemical waste management program at Walters State is dependent on the conscientious efforts of the individual laboratory worker and other employees. Since the laboratory worker frequently handles hazardous chemicals, it is essential that he or she follow the advice, policies and procedures of the Hazardous Waste Management Program. All college individuals are expected to:
a. Dispose of all chemical wastes in accordance with established procedures set forth in this disposal guide,
b. Make a concerted effort to identify all unknown surplus chemicals, utilizing the technical knowledge of faculty members or other appropriate staff members, if necessary,
c. Package and label surplus and waste chemicals in accordance with established procedures set forth in this disposal guide, and
d. Seek the advice, when necessary, of the Safety Administrator concerning the proper handling and disposal of hazardous chemicals.

25.02. MANAGING CHEMICAL WASTES AND SURPLUS CHEMICALS

25.02.01. General

Generation of chemical wastes at Walters State Community College each month presents a serious and complex problem for the entire college community. Unless it is understood that chemical waste is everyone’s problem and responsibility, teaching and research efforts may be severely compromised. The key to solving this problem lies in recognizing the responsibility, understanding the management system, and reducing the volume of surplus and waste chemicals.

25.02.02. Everyone’s Problems and Responsibilities

Surplus and waste chemicals are everyone’s problem. When hazardous chemicals are mishandled or mismanaged they have the potential to contaminate the environment and threaten human health. Whether waste chemicals are generated in organic synthesis, chemistry experimentation, or creating ceramics, understanding your responsibility or those wastes or unwanted chemicals is the most important first step in sound chemical waste management. See the previous section of this manual for the responsibilities of the laboratory worker and individual staff member.

25.02.03. Chemical Waste Management System

The success of the management system depends upon cooperation between college individuals and the Safety Administrators. College individuals will use this disposal guide to identify chemical waste and determine the appropriate route of disposal for that waste. This guide outlines the following three routes of disposal for surplus or
waste chemicals:

1. Disposal to the normal trash or sanitary sewer system,

2. Chemical treatment, followed by disposal to the sanitary sewer system, or

3. Communication with the Safety Administrator for disposal in accordance with local, state, and federal regulations.

When surplus or waste chemicals become the responsibility of the Safety Administrator, first a check is made to see if the chemical is a waste or can be recycled. Then the degree of hazard and appropriate route of disposal are determined. Non-hazardous waste and minute quantities are disposed of in the sanitary sewer or local sanitary landfill. Waste solvents and other hazardous wastes are disposed of through a commercial hazardous waste disposal company. These wastes will either be incinerated or packaged into 55 or 30 gallon drums and sent to an EPA approved hazardous waste landfill. Due to the nature and type of chemical wastes, this is a very costly procedure.

Throughout this process, the college is required to keep complete records which account for hazardous wastes “from the cradle to the grave”, a concept which holds the generator of the waste liable for that waste, essentially forever.

25.02.04. Everyone’s Job in Waste Reduction

The act of Congress which makes it illegal to improperly manage hazardous wastes is entitled “The Resource Conservation and Recovery Act”, or RCRA. The emphasis of this act is on waste reduction, hazardous waste identification and recycling. Of the disposal methods described above, hazardous waste landfilling is the least desirable. The college embraces this philosophy and has designed its management system around waste reduction and recycling methods. This makes sense, because the handling, transportation, treatment and disposal of chemical waste are expensive.

The following recommendations should be adhered to in an effort to minimize waste being generated:

1. Order only what is needed. The economy of larger size orders may cost the college in disposal of unneeded excess, often more than the original cost. Be sure to check current stock before ordering chemicals. It may also be possible to borrow small amounts of chemicals from other laboratories. Take the time to check.

2. Substitute non-hazardous or less hazardous materials for hazardous ones whenever possible. Dichloromethane is much less toxic than carbon tetrachloride and can be substituted satisfactorily in most
cases. Investigate other possible substitutions through the literature or call the Safety Administrator for assistance.

3. Chemicals that can be safely disposed of in the normal trash (i.e., see following section 25.04) or in the sanitary sewer system (i.e., see following section 25.05) should not be put into solvent collecting bottles or mixed with hazardous chemicals.

4. Minute quantities of some chemicals need not be disposed of as hazardous waste. In some instances small quantities or low concentrations of hazardous chemicals may be disposed of with the normal trash or in the sanitary sewer system. With some hazardous chemicals this is a difficult decision. It is important that small quantities of very hazardous chemicals not be mixed with non-hazardous waste, as this may cause the entire waste to be listed as hazardous. The Safety Administrator is to be contacted if there is the slightest doubt concerning the appropriate disposal method to be used.

5. Use recycled chemicals whenever possible. The Safety Administrator is available for assisting in recycling useable, but unwanted chemicals. Before disposing of an unwanted but useable chemical, check to see if other laboratories or departments can use it.

6. When chemicals are ordered, the responsibility for disposal of the chemicals becomes that of the individual ordering the chemicals. Whenever possible, waste chemicals should be treated and disposed of by the laboratory worker. Acids and bases should be neutralized and put into the sewer system. Appropriate procedures are given in this guide (i.e., see following section 25.06). Other treatments which can be completed in the laboratory include metal precipitations and safe reduction of strong oxidizers.

7. Waste solvents are most properly disposed of by incineration. The solvent collection in some laboratories is for the disposal of flammable organic solvents.

8. When planning experiments, consider the disposal of leftover starting materials and of the products and by-products which will be generated. Consider the following questions in planning experiments:

a. Can any material be recovered for reuse?
b. Will the experiment generate any chemical that should be destroyed by a laboratory procedure? If so, what procedure?

c. Can any unusual disposal problems be anticipated? If so, inform the Safety Administrator beforehand.

d. Are chemicals being acquired only in needed quantities?

e. Is there a possibility of replacing a hazardous reagent or solvent with one that is less hazardous and easier to dispose of?

9. Consider the reduction of the scale of experiments. The use of micro-technology in the study of chemical and biochemical reactions can lead to significant savings in costs of chemicals, energy, apparatus, and space. It is now technically feasible to run many reactions with much smaller quantities of chemicals than were needed in the past.

In addition to reduction of waste volumes, today’s economics dictate investigation of micro techniques for use in laboratory operations.

10. Exercise care in the control of reagents that can deteriorate. Indefinite and uncontrolled accumulations of excess reagents create storage problems and safety hazards. These problems can be alleviated, and purchase costs saved, by instituting an excess-chemicals store, to which laboratory workers can go for chemicals, instead of ordering new material.

Reagents that react readily with oxygen or water are prone to deteriorate when stored for long periods of time after the original container has been opened. A laboratory labeling program for chemicals which deteriorate over time, such as water reactive chemicals and pyrophoric chemicals, or which can create severe hazards, such as peroxide forming chemicals, should be instituted to prevent accumulation of dated chemicals which pose an increased risk to the laboratory and personnel.

11. Care should be exercised in the prevention of orphan reaction mixtures. All reaction mixtures stored in laboratory glassware should be labeled with the chemical name, the date they were formed, the name of the laboratory worker responsible, a notebook reference, if needed, and other appropriate hazardous chemical information (i.e., see previous Section 23.04.02). This procedure
can provide the information necessary to guide the disposal of the mixture if the responsible laboratory worker is not available.

Departments may need to initiate a checkout procedure which requires departing laboratory workers and faculty to identify any reaction mixtures that they have not disposed of and to provide the information necessary for their safe disposal.

25.03. WHAT IS HAZARDOUS CHEMICAL WASTE?

25.03.01. General

The information in this section will aid the laboratory worker in determining the hazards associated with chemicals which are encountered during instructional classes. The State Department of Health and Environment, the agency responsible for the regulation of hazardous chemical waste generated in this state, uses the following criteria to determine if a waste should be listed as hazardous waste:

1. It exhibits any of the characteristics of hazardous waste identified in following section 25.03.02.

2. It has been found to be fatal to humans in low dose or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC toxicity (rat) of less than 2 milligrams per liter, or a dermal LD toxicity (rabbit) of less than 200 milligrams per kilogram, or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

3. It contains any of the toxic constituents listed in the following section 25.03.03.

There is some overlap between the chemicals included in following sections 25.03.02 and 25.03.03, as some chemicals fit the criteria of both sections. Lists of chemicals which may be disposed of in the normal trash or the sewer system are referenced in following section 25.04 and 25.05 respectively. If, after reading these sections, there is doubt about the proper method of disposal or hazard associated with a specific substance, the Safety Administrator should be contacted for assistance.

25.03.02 Hazardous Characteristics
Chemicals which have any of the following four characteristics are considered to be hazardous by the State Department of Public Health.

1. **Ignitibility** - A liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, which has a flash point of less than 60 C is considered ignitable. This category includes almost all organic solvents. Some examples are:

   - acetone
   - methanol
   - ethanol
   - toluene
   - benzene
   - pentane
   - hexane
   - xylene
   - heptane
   - ethyl acetate
   - dioxane
   - petroleum ethers

   This is only a small number of examples. Instructions for the disposal of organic solvents are given in following section 25.07.

2. **Corrosive** - An aqueous solution that has a pH of less than or equal to 2, or greater than or equal to 12.5 is considered corrosive. Corrosive materials also include substances such as thionyl chloride, solid sodium hydroxide and some other non-aqueous acids or bases.

3. **Reactivity** - Chemicals which react violently with air or water are considered hazardous. Examples are sodium metal, potassium metal, phosphorus, etc. Reactive materials also include strong oxidizers such as perchloric acid, and chemicals capable of detonation when subjected to an initiating source, such as dry, crystalline picric acid, benzoyl peroxide, or sodium borohydride. Instructions for the disposal of these reactive materials are given in the following section 25.10.

   Solutions of certain cyanides or sulphides which could generate toxic gases are classified also as reactive. Disposal instructions for these types of compounds are given in following section 25.08.07.

4. **Extraction Procedure Toxicity (EP)** - Chemicals characterized as EP toxic are those that may leak hazardous concentrations into the groundwater if their wastes are improperly managed. EP toxic wastes include concentrated toxic metal solutions (i.e., see following section 25.08.03 for disposal instructions) and the following list of pesticides:

   - Endrin
   - Lindane
   - 2,4,D
   - Methoxychlor
   - Toxaphene
   - 2,4,5-TP
   - Silvex
Disposal instructions for pesticides are given in following sections 25.07, 25.08, or 25.09 depending on their physical form.

25.03.03. List of Hazardous Constituents

The list of substances contained in Appendix 25.03.03.A have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms and are designated as toxic wastes. Materials containing any of the toxic constituents listed in this appendix are to be considered hazardous waste, unless, after considering the following factors it can reasonably be concluded that the waste will not pose a substantial present or potential hazard to public health or the environment when properly treated, stored, transported or disposed of, or otherwise managed.

1. The nature of the toxicity presented by the constituent,
2. The concentration of the constituent in the waste,
3. The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in item 7 below,
4. The persistence of the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation,
5. The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation,
6. The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems,
7. The plausible types of improper management to which the waste could be subjected,
8. The quantities of the waste generated at individual generation sites or on a regional or national basis,
9. The nature and severity of the public health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent,
10. Actions taken by governmental agencies or regulatory programs
based on the health or environmental hazard posed by the waste or waste constituent, and

11. Such other factors as may be appropriate.

25.04. CHEMICALS FOR THE NORMAL TRASH

Many chemicals can be safely disposed of in the normal trash in solid form if the containers are tightly capped and of good integrity. Examples are given on the list shown in Appendix 25.04.00.A. These chemicals were selected because they are generally used in laboratories and have oral-rat LD values higher than 500 mg/Kg (i.e., a ten fold safety factor for toxicity over values for determining risk for hazardous constituents) and no positive determination for carcinogenicity according to the National Institute of Occupational Safety and Health (NIOSH) 1979 Registry of Toxic Effects of Chemical Substance, in addition to other negative determinations for environmental toxicity. If the intention is to dispose of more than five pounds of any one of these chemicals, contact the Safety Administrator for an evaluation.

25.05. CHEMICALS FOR THE SANITARY SEWER SYSTEM

Persons generating chemical waste as the result of experimentation must consider that waste an integral part of the experiment. If a procedure exists whereby the initial chemical by-product can readily be converted to a less hazardous chemical, or can be neutralized, this procedure also must be a part of the experimental process.

Many chemicals can be disposed of safely into the sanitary sewer system. Some college facilities have dual sewage disposal systems; however, all discharge from college facilities eventually flows into the sanitary sewer leading to the combined sewage system of the local community.

The lists shown in Appendices 25.05.00.A and 25.05.00.B comprise compounds that are suitable for disposal down the drain only in quantities less than 100 grams at a time with adequate dilution (i.e., 20 to 50 fold). Compounds on both lists are water soluble to at least 3% and present low toxicity hazard. Those on the organic list (i.e., Appendix 25.05.00A) are readily biodegradable and amenable to treatment by the wastewater treatment process. As always, if you have any question regarding the proper procedure, call the Safety Administrator for assistance.

25.06. CONCENTRATED SOLUTIONS OF ACIDS OR BASES

25.06.01 General
Surplus concentrated solutions of acids and bases should be neutralized to within a pH range of 5.0 to 10.0 and then disposed of into the sanitary sewer system, followed by twenty (20) parts of water. Special care should be taken when neutralizing strongly oxidizing acids such as perchloric acid and fresh chromic acid. Additionally, corrosive solutions should never be stored in metal containers.

25.06.02. General Neutralization Procedures

**CAUTION: FUMES AND HEAT ARE GENERATED**

1. Neutralization procedures should take place in a well ventilated hood and behind a safety shield,

2. Keep containers cool while neutralization is being carried out,

3. The person performing the neutralization procedure should be properly equipped with an apron, goggles, or face shield, and gloves, and

4. All steps should be performed slowly.

25.06.03. Acid Neutralization

While stirring, add acids to large amounts of an ice solution of base such as sodium carbonate (soda ash), calcium hydroxide (slaked lime), or 8M sodium hydroxide (for concentrated acids). When a pH of 5.0 is achieved, dispose of the solution into the sewer system followed by 20 parts water.

25.06.04. Base Neutralization

Neutralize by first adding the base to a large vessel containing water. Slowly add a 1M solution of hydrochloric acid (HCL). When a pH of 10.0 is achieved, dispose of the neutralized solution into the sewer system followed by 20 parts of water.

25.06.05. Chromic Acid

1. Alternatives to Chromic Acid Cleaning Solutions - The use of sodium or potassium dichromate dissolved in concentrated sulfuric acid as a cleaning solution presents special handling and disposal problems. Chromic acid is a powerful oxidizing agent, and as such, has the potential to explode on contact with certain oxidizable organic materials. In addition, it is both toxic and corrosive.
Instances of burns to both skin and clothing due to spillage of chromic acid cleaning solutions have occurred. The following list of cleaning agents has been proven to be satisfactory as cleaners and significantly less toxic and hazardous.

- Alconox (powder) or similar detergents
- NoChromix or similar products
- Pierce RBS 35 or similar detergent

2. Disposal of Chromic Acid Solutions - Spent chromic acid solution should be adjusted to pH 5.0 by slowly pouring it into a stirred 8M NaOH/ice solution in a large container. **CAUTION: fumes and heat are generated!** Upon neutralization, reduce Cr(VI) to blue-green Cr(III) by addition of saturated sodium bisulfate solution. (Hexavalent chromium is highly oxidizing and toxic, and is strictly regulated in wastewater). The neutralized, reduced solution should then be disposed of into the sewer system followed by twenty (20) part of water.

25.07. ORGANIC SOLVENTS

25.07.01. General

Waste organic solvents that are free of solids and corrosive or reactive substances may be collected in a common bottle or can, preferably in the original container, which then must be properly labeled.

Separated and well-defined waste is easier and also less expensive to dispose of. High levels of halogens in the organic solvents cannot readily be handled in most incinerators and are not acceptable for incineration. Therefore, it is essential to indicate the composition of the waste liquid and, if a mixture, the approximate percentage by volume of each constituent. The percentage composition and the hazards associated with the waste (i.e., most original container labels provide this information and/or the material safety data sheet) must be provided when requesting disposal of the liquid.

25.07.02. Separation of Halogenated and Non-Halogenated Wastes

The objective of the solvent separation program is to keep the halogen content of the organic solvents for incineration below 1.0% by volume. The following provide guidelines for placing waste in the differing waste solvent containers.

1. Acceptable as non-halogenated waste solvent:
a. Non-halogenated organic solvents, or
b. Small amounts of halogenated solutes.

2. To be placed in halogenated waste solvent containers:
   a. Halogenated organic solvents,
   b. Solvent mixtures with more than 1% halogenated solvent by volume, or
   c. Organic solvents with large amounts of halogenated solute.

   When large volumes of an individual solvent are involved, consideration should be given to recycling methods such as distillation, rather than costly disposal methods. The amount of money saved in solvent purchase costs usually far exceeds the capital expense for such equipment and the success of such programs is well documented, as is the purity of recovered solvent. Please notify the Safety Administrator if generation of such waste is planned.

25.07.03. Substances Which Should Not Be Put In Waste Organic Solvent Bottles

   The following substances are inappropriate for incineration and should not be put in containers with organic solvents:

   1. Solutions of Acids or Bases (i.e., see previous section 25.06 of this manual)
   2. Aqueous Solutions of Toxic Organic Chemicals (i.e., see following section 25.08.02)
   3. Metals (e.g., Ag, As, Ba, Cd, Cr, Hg, Ni, Pb, Sb, Se; see following section 25.08.03)
   4. Vacuum Pump Oil (i.e., see following section 25.08.06)
   5. Sulfides or Inorganic Cyanides (i.e., see following section 25.08.07)
   6. Strong Oxidizers or Reducers (i.e., see following section 25.10.02)
   7. Water Reactive Substances (i.e., see following section 25.10.03)
   8. Unknowns (i.e., see following section 25.13)
9. Large Amounts of Water

25.07.04. Waste Solvent Storage Precautions

The acids formed when halogenated solvents are left moist can corrode metal containers, as can any dissolved corrosive in a discarded mixture. It is necessary to assure proper storage containers are used for waste solvents.

To avoid unnecessary exposure to toxic fumes, waste containers should be tightly capped when in storage. Heated solvents must be cooled to room temperature before being placed in a closed container. The transfer of highly toxic waste materials should be done in a chemical fume hood. However, storage of closed containers in fume hoods is not advised as this can impede the protection performance of the hood.

25.08. OTHER LIQUIDS

25.08.01. General

Section 25.06 of this chapter deals with concentrated solutions of acids or bases. Section 25.07 of this chapter discusses the disposal of organic solvents. This section deals with six other types of liquid chemicals. For liquids not covered by these sections, use previous section 25.03 “What Is Hazardous?” to determine if the liquid is hazardous. Package hazardous liquids according to the instructions in following section 25.15. Dispose of non-hazardous, water soluble liquids into the sewer system.

25.08.02. Aqueous Solutions of Toxic Organic Chemicals

The decision as to whether an aqueous solution should be incinerated, treated in some way, or put into the sewer depends upon the toxicity and concentration of the solute. In general, aqueous solutions of organic chemicals can be put into the sewer system if they are neutral, non-reactive, non-ignitable, and the organic solute is not highly toxic.

If the sewer system is not selected as an appropriate route of disposal for an aqueous solution (i.e., because the organic solute is highly toxic), package the solution according to the instructions in following section 25.15. The Safety Administrator will facilitate evaluation of the solution for its appropriate route of disposal.

25.08.03. Aqueous Solutions of Toxic Metals
The following toxic metals are regulated in the sanitary sewer system above the concentrations given below. Faculty and staff should understand that these metals require special precautions for disposal. Discharge of these metals, their compounds or aqueous solutions into the sanitary sewer must be negligible. It is preferred that concentrated aqueous solutions of these metals be treated to precipitate the metal prior to filtering discharge to the sanitary sewer. The filtered precipitate is then disposed of as hazardous waste.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Negligible Concentrations That May Be Discharged Into the Sanitary Sewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>15.0 milligrams/liter</td>
</tr>
<tr>
<td>Chromium</td>
<td>5.0 “</td>
</tr>
<tr>
<td>Copper</td>
<td>3.0 “</td>
</tr>
<tr>
<td>Zinc</td>
<td>2.0 “</td>
</tr>
<tr>
<td>Lead</td>
<td>2.0 “</td>
</tr>
<tr>
<td>Cadmium</td>
<td>2.0 “</td>
</tr>
</tbody>
</table>

Arsenic, lead, mercury, and silver are especially important pollutants and filtering, precipitation, or some other type of collection must be routine procedures for laboratories using them. Even when silver recovery units are employed, it has been found that instances of high discharge result from poor maintenance.

25.08.04. Solutions of Non-Metallic Pesticides

Solutions of non-metallic pesticides should be placed in five gallon cans and then contact the Safety Administrator.

25.08.05. Free Flowing Metallic Mercury

Package according to instructions found in section 25.15. Individual broken thermometers with small amounts of metallic mercury should be placed in a closed container of good integrity and given to the Safety Administrator.

25.08.06. Vacuum Pump Oil
Package according to the directions found in section 25.15. Silicon based diffusion pump oil should be segregated for separate disposal.

25.08.07. Solutions of Cyanide or Sulfide Compounds

Solutions containing cyanide or sulfide compounds will release toxic gas under acidic conditions. These solutions must be packaged separately from acids and given to the Safety Administrator.

25.09. SOLID CHEMICALS

Package tightly capped containers of hazardous solid chemicals according to the instructions given in following section 25.15. To determine whether or not a chemical is hazardous see section 25.03, Section 25.04 of this chapter lists chemicals that may be disposed of in the normal trash.

Small amounts of hazardous organic solids can be dissolved in an organic solvent. Only dissolved solids, and no residue, should be placed in the waste organic solvent containers. See previous section 25.07 for further information on the disposal of organic solvents.

25.10. POTENTIALLY EXPLOSIVE AND OTHER REACTIVE CHEMICALS

25.10.01. Potentially Explosive Chemicals

Each container of potentially explosive chemicals must be packaged separately. Label clearly as to hazardous characteristics and special handling precautions. In addition, inform the Safety Administrator that you have potentially explosive materials for disposal.

Potentially explosive chemicals include:

- Ammonium Nitrate
- Diazox and Diazoonium Compounds
- Peroxide forming agents (See below)
- Picric Acid (dry and crystalline)
- Hydrazine Compounds
- Nitrocellulose (dry)

(Note: Weak aqueous solutions of picric acid may be disposed of to the sewer system and the rinsed container disposed of as normal trash.)
Peroxides are low power explosives and very sensitive to shock and heat. A variety of organic compounds react with oxygen to form unstable peroxides. Well known peroxide forming agents include:

- Diethyl Ether
- Tetrahydrofuran
- Isopropyl Ether
- Other Ethers (e.g., Dioxanes)

Other peroxide forming agents include:

- Aldehydes
- Compounds with benzylic hydrogens
- Vinlys
- Compounds with allyl groups

Exposure of any of the peroxide forming agents to light or air increases the rate of peroxide formation. Therefore, store these agents in full, light-tight containers. Order small amounts frequently to decrease storage time. Date all new containers when opened. Refrigeration does not prevent peroxide formation and, unless the refrigerator used is explosion safe, these materials should not be refrigerated.

Be particularly cautious with materials of unknown vintage. Do not attempt to remove caps from containers that may cause sparks or excess friction (e.g., old metal cans or fritted glass stoppers). Call a Safety Administrator when such containers are found.

Never distill peroxide forming solvents unless they are known to be free of peroxides. Peroxides concentrated in the residue can pose a serious explosion hazard.

Before beginning work with a peroxide forming agent, determine its peroxide content. Dispose of agents containing greater than 80 ppm peroxide. Easy to use quantitative “peroxide test strips” are available from the Lab Safety Supply Company.

Materials found to contain peroxides (i.e., greater than 80 ppm) can usually be treated prior to disposal. Methods for removal of peroxides commonly involve addition of a reducing agent such as ferrous sulfate (for diethyl ether peroxides).

The treated solvent should be placed in a waste organics container and the empty container rinsed with water and placed in the normal trash. Peroxides are usually water soluble and the rinsate can be put in the sanitary sewer.

25.10.02. Strong Oxidizers and Reducers

These materials should be chemically treated in the laboratory for disposal. Strong oxidizers and reducers include the following:

1. Strong Oxidizers
Chromic acid (fresh) Metallic chlorates
Metallic nitrates Metallic perchlorates
Metallic permanganates Perchloric acid

Strong Reducers
n-Butyllithium (also water reactive)
Calcium hydride
Stannous chloride
Metallic sulfides
Sodium hydride

25.10.03 Other Reactives (Including Water Reactives)

Package liquids separately from solids. Please note special hazards and/or handling precautions on each box. See following section 25.15 for additional packaging and labeling instructions. Other reactives include the following:

Acetyl chloride Phosphorous (yellow)
Benzoyl peroxide Potassium metal
Bromine Sodium metal
Calcium metal Thionyl chloride
Lithium metal

25.11. PERCIPITATES, SEMI-SOLIDS, RESIDUES, GELS, ETC.

Precipitates, semi-solids, residues, or gels of any kind must not be placed in with the waste organic solvents since they cannot be pumped for incineration. Use previous section 25.03 “What is Hazardous Chemical Waste?” to determine if the material is hazardous or call the Safety Administrator for assistance. If separable, the liquid phase should first be removed by decantation, filtration, evaporation, or absorption. Hazardous materials should be packaged in leak-proof containers according to following section 25.15.

25.12. LABWARE CONTAMINATED WITH TOXIC CHEMICALS

Disposal of labware (i.e., which would usually be put into the normal trash) becomes of concern when it is contaminated with chemicals which are highly toxic. The term “labware” pertains to disposable laboratory items, aprons, etc. The decision as to whether contaminated labware should be placed in a secure landfill, treated in some way, or put into the normal trash depends upon the toxicity and concentration of the contaminant. This decision is made by the Safety Administrator through consultation.
with appropriate resources.

If the normal trash is not an appropriate route of disposal for contaminated labware (i.e., because the contaminant possesses a high degree of toxicity) package according to following section 25.15. The Safety Administrator will facilitate evaluation of the labware for its appropriate route of disposal.

All labware contaminated with PCB’s of 50 ppm or greater must be given to the Safety Administrator for disposal.

In general, labware contaminated with chemicals should be put into the normal trash if it is non-reactive, non-ignitable and the contaminant does not possess a high degree of toxicity. Call the Safety Administrator if you are unsure or have any questions.

25.13. UNKNOWN CHEMICALS

25.13.01. General

Faculty and staff must make every effort to provide an accurate description of all surplus chemicals. Unknown chemicals present serious problems for the college. Without a description, chemicals can neither be handled nor disposed of in a safe manner. Disposal companies will not accept chemical waste without an analysis, and analysis of one sample is expensive.

25.13.02. Investigation of Unknown Chemicals

The Safety Administrator will provide assistance in investigating the identity of unknown chemicals. Any information provided by individuals wishing to dispose of unknown chemicals will greatly aid investigation and identification. Whether a chemical is organic or inorganic is an example of information which is very useful in the investigation process.

25.13.03. Procedure

Call the Safety Administrator upon discovery of an unknown chemical. Do not move unknown chemicals from the source of generation if possible.

25.13.04. Reducing the Problem

The problem presented by unknown chemicals can be reduced if lab personnel are thorough in maintaining labels on chemical containers. Periodic review of chemical
stock, and careful recordkeeping will less the chance of discovering containers with missing labels.

25.14. GENERAL LABORATORY CLEANUP

The Safety Administrator can become responsible for unknown and unwanted chemicals when laboratories change hands. The ensuing cleanup and disposal of chemicals are time consuming and costly. To alleviate this problem, the Safety Administrator offers assistance to individuals planning to leave their laboratory. This assistance includes proper sorting of unwanted chemicals. Before a faculty member, that has been responsible for chemicals, leaves the college, either the departing individual or the department head should contact the Safety Administrator. This will save both time and resources of the individual and/or department.

25.15. PACKAGING AND LABELING CHEMICALS FOR DISPOSAL

Good packaging provides safety in transporting chemicals and the labeling of materials is essential for proper disposal. Use the following guidelines when reassigning material to the Safety Administrator for disposal:

1. Minimize the quantity of chemicals reassigned to the Safety Administrator. Items which can be disposed of in the trash or into the sewer should not be reassigned. If there is more than one container of the same chemical, assure that the containers are filled to capacity. If there are doubts about a chemical, check previous section 25.03 “What is Hazardous Chemical Waste?”.

2. Liquid and solid chemicals should be in closed, labeled containers. Each container must have a copy of the Materials Safety Data Sheet (MSDS) for the chemical attached securely to the container. In addition, the date, the department, and the name of the responsible department representative must be provided with the MSDS.

25.16. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA) which directed the U.S. Environmental Protection Agency (EPA) to develop and implement a program to protect human health and the environment from improper hazardous waste management practices. The program is designed to control the management of hazardous waste from its generation to its ultimate disposal (i.e., from “cradle-to-grave”).
EPA first focused on large companies, which generate the greatest portion of hazardous waste. Business establishments producing less than 1000 kilograms (i.e., 2,200 pounds) of hazardous waste in a calendar month (i.e., known as small quantity generators) were exempted from most of the hazardous waste management regulations published by EPA in May 1980.

In recent years, however, public attention has been focused on the potential for environmental and health problems that may result from mismanaging even small quantities of hazardous waste. For example, small amounts of hazardous waste dumped on the land may seep into the earth and contaminate underground water that supplies drinking water wells.

In November 1984, the Hazardous and Solid Waste Amendments to RCRA were signed into law. With these amendments, Congress directed EPA to establish new requirements that would bring small quantity generators who generate between 100 and 1000 kilograms (kg) of hazardous waste in a calendar month into the hazardous waste regulatory system. EPA issued final regulations for these 100 to 1000 kg/mo generators on March 24, 1986. In addition, generators of no more than 100 kg hazardous waste and no more than 1 kg (i.e., about 2 pounds) per month of acutely hazardous waste were defined as conditionally-exempt small quantity generators. Thus, Walters State Community College became classified as a conditionally-exempt small quantity generator of hazardous waste.

In this regard Walters State is required to:

1. Identify all hazardous waste generated,

2. Send this waste to a hazardous waste facility, or a landfill or other facility approved by the state for industrial or municipal wastes, and

3. Never accumulate more than 1000 kg of hazardous waste on college property. (If the college does, it becomes subject to all the requirements applicable to 100-1000 kg/mo generators).
26.01 GENERAL REQUIREMENTS

Walters State Community College will conform to the requirements of Section 504 of the Rehabilitation Act of 1973 published by the Department of Health, Education, and Welfare and the Americans with Disabilities Act (ADA) of 1990. Specifically, the college will not discriminate against a qualified individual with a disability because of the disability of such individual in regard to job application procedures, the hiring, advancement, or discharge of employees, employee compensation, job training, and other terms, conditions, and privileges of employment. Additionally, no qualified individual with a disability will, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the college including transportation facilities, or be subjected to discrimination by the college.

26.02 DEFINITIONS

1. Qualified Individual with a Disability.

An individual with a disability who:

a. With or without reasonable accommodation, can perform the essential functions of the employment position that such individual holds or desires, or

b. With or without reasonable modifications to rules, policies, or practices; the removal of architectural, communication, or transportation barriers; or the provision of auxiliary aides and services, meets the essential eligibility requirements for the receipt of services or the participation in program or activities provided by the college.

2. Disability.

The term “disability” means, with respect to an individual:

a. A physical or mental impairment that substantially limits one or more of the major life activities of such individual;

b. A record of such an impairment; or
c. Being regarded as having such an impairment.

3. Reasonable Accommodation.

The term “reasonable accommodation” includes the following provided that the accommodation would not impose an undue hardship on the operations of the college:

a. Making existing facilities used by employees readily accessible to and usable by individuals with disabilities; and

b. Job restructuring; part-time or modified work schedules; reassignment to a vacant position; acquisition or modification of equipment or devices; appropriate adjustment or modification of examinations, training materials, or policies; the provision of qualified readers or interpreters, and other similar accommodations for individuals with disabilities.


The term “auxiliary aids and services” includes:

a. Qualified interpreters or other effective methods of making annually delivered materials available to individuals with hearing impairments;

b. Qualified readers, taped texts, or other effective methods of making visually delivered materials available to individuals with visual impairments; Acquisition or modification of equipment or devices; and

c. Other similar services and actions.

5. Undue Hardship.

An action requiring significant difficulty or expense.


The term discrimination includes the following:
a. The imposition or application of eligibility criteria that screen out or tend to screen out an individual with a disability or any class of individuals with disabilities from fully and equally enjoying any goods, services, facilities, privileges, advantages, or accommodations, unless such criteria can be shown to be necessary for the provision of the goods, services, facilities, privileges, advantages, or accommodations being offered;

b. A failure to make reasonable modifications in policies, practices, or procedures, when such modifications are necessary to afford such goods, services, facilities, privileges, advantages, or accommodations to individuals with disabilities, unless making such modifications would fundamentally alter the nature of such goods, services, facilities, privileges, advantages, or accommodations;

A failure to take such steps as may be necessary to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids and services, unless taking such steps would fundamentally alter the nature of the goods, service, facility, privilege, advantage, or accommodation being offered or would result in an undue hardship;

c. A failure to remove architectural barriers, and communication barriers that are structural in nature, in existing facilities, and transportation barriers in existing vehicles, where such removal is readily achievable; and

d. Where the removal of a barrier under clause (d) is not readily achievable, a failure to make such goods, services, facilities, privileges, advantages, or accommodations available through alternative methods if such methods are readily achievable.

7. Readily Achievable

An action that is easily accomplished without undue hardship as defined by the Americans with Disabilities Act.

26.03 RESPONSIBILITIES
In accordance with specific requirements of the ADA, the following personnel are responsible for directing ADA matters:

1. Faculty/Staff    Director of Human Resources  
   ADA Coordinator
2. Student ADA Coordinator  Dean of Student Support Services  
   and Special Assistant to the  
   President for Diversity

The college will maintain an Office of Services for Individuals with Disabilities. This office will provide support services, materials, information, and assistance to ensure that students with disabilities have access to all educational opportunities provided at Walters State and to minimize the differences and maximize the chance for success in the programs of the students’ choice. Support services and assistance include helping to arrange for interpreters, note takers, readers and talking books; identifying tutors for learning disabilities; arranging for extended time testing and other testing accommodations; coordinating liaison with instructors, counselors, and academic advisors; providing specialized equipment; and coordinating the provision of accessible parking. Visitors to the college that have disabilities and who require special accommodations while on campus will be directed to use the services of this office.

Individuals with disabilities that have related matters concerning employment practices at Walters State will bring the matters to the attention of the Faculty/Staff ADA Coordinator. This ADA coordinator will be responsible for coordinating all employment practices at the college to ensure that individuals with disabilities are not discriminated against in all employment processes and procedures.

26.04 PARKING LOTS, SIDEWALKS, AND PATHS

Handicapped parking spaces will be provided within 200 feet of each facility. Each parking space will be a minimum of 12 feet wide, or a 4 feet wide transfer area will be provided between standard spaces or van parking parallel to the sidewalk, will be facilitated. Wheelchair transfer areas will be on the same level as the vehicle. The spaces will be so located that the individual in a wheelchair does not have to wheel behind parked vehicles. Each space will be accessible to an accessible path to the facility. Parking spaces will be identified by appropriate signage. Parking lots will be well lighted at night.

Curb cuts or ramps will be provided if the parking spaces are not on the same level as the path. Curb cuts and ramps should be rough textured or a graveled strip provided to warn blind persons of the intersection. Sidewalks will be a minimum of 8 feet wide.
Paths and sidewalks will be firmly constructed and not slippery when wet. Walkways will be a minimum of 5 feet wide with a slope no greater than 5% and no abrupt changes in level or interruption by steps. Downspouts will not discharge onto walkways. Intersections will be blended by ramps when appropriate.

26.05. RAMPS

Ramps will be non-slip and a minimum of 36 inches wide with a slope equal to or less than 1 in 12. Six (6) feet of straight level run will be provided at the end of the ramp. A level rest platform will be provided at appropriate intervals and at turns. A 4-inch high minimum curb will be constructed on both sides of the ramp. A handrail will be provided 32 inches above the ramp surface on at least one side of the ramp. The handrail will extend 12 inches beyond the top and bottom of the ramp provided a hazardous situation will not result. Where a ramp meets a door that swings out, a level area will be provided that is 5 feet by 5 feet and 1 foot beyond the handle side of the door of the level area. If the door swings away from the ramp, a level area will be provided that is 3 feet by 5 feet and 1 foot of level area beyond the handle side of the door.

26.06. BUILDING INTERIORS

26.06.01. Doors

Each building will have at least one primary entrance that is barrier-free. Thresholds will be flush with the floor or be a maximum of 3/4-inch high and beveled. Twelve (12) inch high kickplates are recommended for high wheelchair traffic. Handles will be easily gripped of the lever, push plate, or panic bar type. Handles will be positioned 42 inches above floor level with panic bars being located 36 inches above floor level. Handles should be knurled on doors accessing dangerous areas. All swinging doors should have a viewing panel located 36 inches above floor level. Opening pressure of doors should not exceed 8 pounds. A minimum of 6 feet 6 inches will be provided between two doors. A 32 inches minimum clear opening will be provided. Doorway matting will be recessed if it exceeds 1/2 inch above floor level. Minimally, a level floor area will be provided for a distance of 5 feet from the door in the direction of door swing and 1 foot beyond each side of the door.

26.06.02. Stairs

A maximum riser height of 7 and 1/2 inches will be observed. No projecting nosing will be permitted. Landings should preferably contrast in color from connecting stairs. Handrails will be 32 inches above the tread (i.e., measured vertically from the nosing). At least one handrail should extend beyond the ends of the stairs provided a hazardous condition will not result. Preferably, handrails at landings should have
markings indicating the floor number. Stairs will be well lighted and the floors non-slip.

26.06.03. Corridors and Floors

Corridors will be at least 5 feet wide. All floors will have a non-slip surface.

26.06.04. Elevators

A minimum interior cab size of 5 feet by 5 feet 6 inches will be observed. The door will provide a clear opening of 42 inches. The door will have a safety edge with a sensing device. Controls will not be installed at a height in excess of 48 inches. Control devices will have instructions that can be understood by both seeing and visually impaired persons (i.e., raised/countersunk lettering, numbers, and/or symbols). Both audible and visual signals at landings will be provided. Handrails will be provided on sides of the cab at a minimum.

An unobstructed area that will be at least 4 feet by 5 feet will be provided in front of the elevator entrances.

Elevators are not to be used in the event of a fire or other emergency. Thus, in those college multi-level facilities that do not have ramps but have an elevator instead, the following procedure will apply to handicapped persons (i.e., especially the mobility impaired).

1. All handicapped persons using college facilities should be informed that they should enter the nearest safe stairwell in the event of this type of emergency.

2. For those individuals that cannot proceed down the stairwell (e.g., people in wheelchairs) they should wait to be assisted.

3. Walters State Community College employees will assist such handicapped individuals to exit the building provided such action is reasonable and safe.

It is the responsibility of all Walters State employees to be aware of, understand, and promulgate this procedure to all handicapped persons using college facilities (e.g., faculty will inform handicapped students in their classes of the procedures).

26.06.05. Work, Study, and/or Lab Stations
Suitable work, study, and/or lab stations will be provided to satisfy the needs of handicapped persons. Such stations will have minimum knee clearances of 32 inches wide and 27 1/2 inches high. Counter tops will not exceed 30 inches from the floor level. Controls and other specialized facilities associated with the station will be readily accessible by the handicapped. Stack aisles in libraries will be a minimum of 36 inches wide.

26.07. COMMUNICATIONS/HAZARDS

Rooms will be identified by raised letters and/or numerals. This identification will be located adjacent to the handle side of the door on the wall 5 feet above the floor level. Hardware should be knurled on doors leading to dangerous areas.

Controls will be located at a maximum height of 48 inches above the floor level. Examples of controls are switches, thermostats, and fire alarms.

Warning signals will be communicated both audibly and visually. Appropriate warning devices will be provided in openings or open manhole coverings in existing pedestrian paths. Obstructions (e.g., signs and lights) protruding into paths of travel will be located no lower than 7 feet above the floor level.

26.08. SERVICES

26.08.01 Restrooms

In each college facility, public restrooms for both males and females will be provided with a stall for handicapped persons. The minimum stall size will be 3 feet wide by 5 feet deep with an outswing door providing at least 32 inches of clearance. The height of the toilet seat will be in the range of 17 and ½ inches to 20 inches. Grab bars will be provided on both sides of the toilet. The bars will be positioned 33 inches from floor level, 1 and 1/2 inches in diameter, and located 1 and 1/2 inches from the wall. A turning space of 5 feet by 5 feet will be provided in front of the toilet stall.

In male restrooms, at least one urinal will be provided that is preferably 15 inches but no greater than 19 inches above the floor level.

Clear space will be provided beneath at least one sink to a minimum height of 30 inches to the bottom of the apron. Faucet handles will be easy to operate. All hot water lines, traps, and drains will be protected. Mirrors will not be tilted and the bottom edge of all accessories (e.g., soap dispensers and towels) will not be located above 40 inches maximum from the floor level.
Vanity partitions will not interfere with wheelchair accessibility.

26.08.02 Water Fountains

The upper edge of the basin will not be over 3 feet above the floor level. Controls and spouts will be at the front. For recessed water fountains an access of not less than 3 feet wide will be provided. Controls will be easy to operate.
CHAPTER 27

WHAT TO DO IN CASE OF A LOSS OR LEGAL ACTION

27.01. AUTOMOBILE LIABILITY

The general procedures to be followed by college operators of motor vehicles that have been involved in an accident are outlined in Chapter 14 “Motor Vehicle Operations” of this manual.

27.02. CASUALTY COMPREHENSIVE GENERAL LIABILITY, PROFESSIONAL LIABILITY, AND ANCILLARY LIABILITY

In case of an accident to a member of the public other than an automobile accident, the employee who first learns of an incident should contact the Campus Police office who will secure the necessary information to properly evaluate and dispose of each concern. Also, the employee will inform his/her supervisor of the incident.

If the incident comes in the form of a legal complaint, immediate notification should be given by phone to the chief administrative officer for the related division of the college.

If the claim is in the form of a lawsuit, the document should not be accepted by any personnel at the college. The person presenting the document should be accompanied to the President’s Office and immediate notice of this contact given to the chief administrative officer of the related division of the college. In the event of a claim, it is prudent that the employee refrain from discussing the incident with the complaining party and particularly any attorney representing such patient. Such concerns or inquiries should be directed to the President’s Office.

For any incident involving any equipment or materials which has resulted in a bodily injury, such equipment or materials should be discontinued from use without any alterations, adjustments, or manipulations taking care to safeguard and protect all such items. Also, the Safety Administrators are to be notified of the incident.

27.03. COMPREHENSIVE CRIME (BURGLARY, ROBBERY, EMPLOYEE DISHONESTY)

All such losses/incidents should be reported to the Campus Police Office and the employee’s supervisor or department head.
27.04. PROPERTY

In the event that loss occurs, Campus Police and the employee’s supervisor or department head are to be utilized for immediate reporting procedures.

When phoning in a loss, the following information should be provided:

1. Date and time of loss,
2. Location of loss,
3. Cause if known,
4. Kind of property damage,
5. Estimate (property damage), and
6. Contacts (name, title, and phone number).

In the event of a serious loss, detailed information should be subdivided into general classifications such as buildings, office equipment, fixtures, records, and machinery, extra expense and business interruption. It is easier to determine individually the scope of damage and replacement cost.

When the situation permits and as soon as safely possible, prudent salvage actions should be immediately instituted. This would include separating damaged from undamaged property, cleaning, and proper maintenance of the involved equipment to prevent further deterioration. When possible, it is suggested that photographs be taken before disturbing the scene and then proceeding with the necessary temporary repair in order to minimize down time.

27.05. CLAIMS

The required procedures for claims alleging injury resulting from negligence of the institution and for workers compensation claims are outlined in the Walters State Community College Staff Policies and Procedures Manual section 05:06:00 - Claims Process and 08:13:00 – Emergency Procedures.
CHAPTER 28

EMERGENCY PREPAREDNESS PLAN

28.01. INTRODUCTION

The purpose of this policy is to establish procedures for action in response to unusual occurrences. While there are several types of occurrences, this Emergency Preparedness Plan sets forth primary plans of action in Sections 28.03 and 28.04 for the more commonly experienced occurrences. Sections 28.05 and 28.06 detail the college’s Fire Regulations and Emergency Notification Procedures respectively.

Section 28.03 provides operational guidance for preparing and responding to mass casualty situations, external disaster, and/or civil disturbances. Guidance for response to these kinds of situations has been prepared as one identifiable, primary plan because of the nature and susceptibility of the population at this campus.

Section 28.04 provides operational guidance in cases of fire or internal disaster at this facility. Fire conditions which become uncontrollable and present potential threat to life before evacuation procedures can be successfully completed, or which have caused immediate injury, may be declared and expanded into mass casualty response as detailed in Section 28.03. This decision should be made by the official in charge at the scene of a fire when circumstances preclude further notification.

28.02 GENERAL INFORMATION

28.02.01 Disaster Definitions

The various types of major disasters or unusual occurrences are detailed as follows:

1. **Internal Disasters** - Fire, explosion, collapse, etc., within the boundaries of the college.

2. **External Disasters** – Community disasters involving storm, fire, flood, tornado, epidemic, hazardous chemical spill, train wreck, or airplane crash.

3. **Disaster Threat** – Disaster threatening the college or surrounding community requiring possible evacuation or the necessity of housing or feeding refugees (i.e., enemy attack, flood, and tornado).
Definitions relative to evacuation and relocation are as follows:

1. Rally Point – Outside area away from the point of disaster.

2. Refuge Area – Indoor area designated for housing the disabled until assistance can be given to remove them from the building.

28.02.02 Auxiliary Support Groups – Morristown Campus City of Morristown

City of Morristown

<table>
<thead>
<tr>
<th>Emergency Communications (Police and Fire)</th>
<th>911</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Red Cross</td>
<td>423-586-2442</td>
</tr>
<tr>
<td>Tennessee Department of Public Health</td>
<td>423-586-6431</td>
</tr>
<tr>
<td>Fire Department</td>
<td>423-586-5072</td>
</tr>
<tr>
<td>Police Department</td>
<td>423-581-0100</td>
</tr>
<tr>
<td>Emergency Management</td>
<td>423-581-6225 or 586-1931</td>
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<tr>
<td>National Guard Morristown</td>
<td>423-587-7042</td>
</tr>
<tr>
<td>Campus Police</td>
<td>423-585-6752</td>
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<tr>
<td>Campus Health Clinic</td>
<td>423-585-6820</td>
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<tr>
<td>WSCC Physical Plant Operations</td>
<td>423-585-6907</td>
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<tr>
<td>Tennessee Department of Public Health</td>
<td>423-586-6431</td>
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<tr>
<td>Lakeway Regional Hospital</td>
<td>423-522-6000</td>
</tr>
<tr>
<td>Morristown-Hamblen Health Care Systems</td>
<td>423-586-4231</td>
</tr>
<tr>
<td>Morristown Power and Water</td>
<td>423-586-4121</td>
</tr>
<tr>
<td>Civil Defense – Tennessee</td>
<td>1-800-262-3300</td>
</tr>
<tr>
<td>United Cities Gas</td>
<td>1-800-556-5469</td>
</tr>
<tr>
<td>National Weather Service</td>
<td>423-586-3771</td>
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Auxiliary Support Groups – Greeneville/Greene County Center for Higher Education

City of Greeneville

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<tr>
<th>Emergency Communications (Police and Fire)</th>
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</thead>
<tbody>
<tr>
<td>Tennessee Department of Public Health</td>
<td>423-798-1749</td>
</tr>
<tr>
<td>Police Department</td>
<td>423-639-7111</td>
</tr>
<tr>
<td>Fire Department</td>
<td>423-638-4243</td>
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<tr>
<td>Emergency Management</td>
<td>423-798-1729</td>
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<td>Campus Police</td>
<td>423-798-7961/423-585-6752</td>
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<tr>
<td>Campus Health Clinic</td>
<td>423-585-6820</td>
</tr>
<tr>
<td>WSCC Physical Plant Operations</td>
<td>423-585-6907</td>
</tr>
<tr>
<td>Laughlin Memorial Hospital</td>
<td>423-787-5000</td>
</tr>
<tr>
<td>Takoma Adventist Hospital</td>
<td>423-639-3151</td>
</tr>
<tr>
<td>Greeneville Light and Power</td>
<td>423-636-6200</td>
</tr>
<tr>
<td><strong>Greeneville Water Department (Maint./Repair)</strong></td>
<td>423-638-5372</td>
</tr>
<tr>
<td><strong>National Guard – Greeneville</strong></td>
<td>423-638-7812</td>
</tr>
<tr>
<td><strong>Civil Defense – Tennessee</strong></td>
<td>1-800-262-3300</td>
</tr>
<tr>
<td><strong>Greeneville Oil and Petroleum, Inc.</strong></td>
<td>423-638-3145</td>
</tr>
<tr>
<td><strong>National Weather Service</strong></td>
<td>423-586-3771</td>
</tr>
</tbody>
</table>

**Auxiliary Support Groups –Sevier County Campus**

**City of Sevierville**

| Emergency Communications (Police and Fire) | 911 |
| Police Department | 865-453-5506 |
| Fire Department | 865-453-4633 |
| Emergency Management / Civil Defense | 865-453-4919 |
| Sevier County Health Department | 865-428-5704 |
| Campus Police | 865-774-5813/423-585-6752 |
| Campus Health Clinic | 423-585-6820 |
| WSCC Physical Plant Operations | 423-585-6907 |
| Fort Sanders Sevier Medical Center | 865-429-6100 |
| Sevier County Electric System | 865-453-2887 |
| City of Sevierville Water Department | 865-453-5522 |
| National Guard Armory (Pigeon Forge) | 865-429-7056 |
| American Red Cross (Knoxville) | 865-584-2999 |

**Auxiliary Support Groups –Claiborne County Extension**

**City of Tazewell**

| Emergency Communications (Police and Fire) | 911 |
| Police Department | 423-626-9484 |
| Fire Department | 423-626-9433 |
| Army National Guard | 423-626-5966 |
| American Red Cross | 1-800-578-7531 |
| Claiborne County Health Department | 423-626-4291 |
| Campus Police | 423-585-6752 |
| Campus Health Clinic | 423-585-6820 |
| WSCC Physical Plant Operations | 423-585-6907 |
| Claiborne County Hospital | 423-626-4211 |
| Powell Valley Electric | 423-626-5204 |
| Claiborne County Utilities District | 423-626-4282 |
Auxiliary Support Groups / Emergency Contacts – Great Smoky Mountains Exposition Center

City of White Pine

<table>
<thead>
<tr>
<th>Emergency Communications (Police and Fire)</th>
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<tr>
<td>Police Department</td>
<td>865-674-6568</td>
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<tr>
<td>Fire Department</td>
<td>865-674-2555</td>
</tr>
<tr>
<td>Emergency Management / Civil Defense</td>
<td>423-586-1931</td>
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<tr>
<td>Hamblen Department of Public Health</td>
<td>423-586-6431</td>
</tr>
<tr>
<td>Campus Police</td>
<td>865-774-5813/423-585-6752</td>
</tr>
<tr>
<td>Campus Health Clinic</td>
<td>423-585-6820</td>
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<tr>
<td>WSCC Physical Plant Operations</td>
<td>423-585-6906</td>
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<tr>
<td>Lakeway Regional Hospital</td>
<td>423-586-2302</td>
</tr>
<tr>
<td>Morristown Hamblen Heath Care Systems</td>
<td>423-586-4231</td>
</tr>
<tr>
<td>White Pine Water</td>
<td>865-674-2556</td>
</tr>
<tr>
<td>Civil Defense - Tennessee</td>
<td>1-800-262-3300</td>
</tr>
<tr>
<td>United Cities Gas</td>
<td>423-586-0441</td>
</tr>
<tr>
<td>American Red Cross</td>
<td>423-586-2442</td>
</tr>
</tbody>
</table>

28.02.03 Important Locations – Morristown Campus

- Command Post - Campus Police Office
- Emergency Supplies Staging - Technical Education Building (Linen Supplies) Contracted
- Food Service
- First Aid/Medical Treatment and Health Clinic or other designated area
- Holding Area - Plant Operations Building
- Manpower Pool - Natural Science Building
- Morgue -
- Public Information Center - Public Information Office

28.02.04 General Notification Procedures

The Campus Police Office will be, in all probability, the first to have the knowledge of any disaster due to their communication capabilities and hours of service. Therefore, the Campus Police Office will gather, record and disseminate all pertinent information surrounding any emergency situation (i.e., number of injuries/deaths, location of emergency, immediate status, and necessary response), through the appropriate officials as outlined later. The release of public information will depend on the nature of the emergency, and will be effected only after the initial internal notification has been completed. While cooperation with the media, next-of-kin, and the public is important, it is essential all facts surrounding the impact of any emergency are known so
as to avoid the possible release of erroneous information.

28.02.05 Emergency Evacuation/Relocation Notification Procedures

Once notified, the Director of Campus Police or his/her appointed messenger will notify the office of the President of the college and/or the office of the Vice President for Business Affairs of the need to either implement the emergency relocation plan or the emergency evacuation plan. Immediately after being contacted, the office of the President and/or Vice President for Business Affairs will alert the office of the Vice President for Academic Affairs, the office of the Vice President for Student Affairs, and personnel of Plant Operations of the appropriate plan to be implemented for emergency relocation. Instructions will be given to begin the relocation process according to evacuation patterns outlined in the following pages. At this time, the assistance of the Plant Operations personnel will be delegated, and these persons may be assigned to buildings as group guides.

The office of the Vice President for Academic Affairs will be responsible for notifying appropriate personnel in the Judge William H. Inman Humanities Complex, R. Jack Fishman Library, Clifford “Bo” Henry Center for Business and Technology, McGuffin-Jolley Natural Science Building, Doggett Mathematics and Behavioral/Social Sciences Building, and the East Tennessee Regional Public Safety Center. Instructions on the evacuation procedure will be given, and the process will begin.

The office of the Vice President for Student Affairs will be responsible for notifying designated floor coordinators beginning with the top floor of the building. The office of Distance and Evening Education will notify all satellite campuses as applicable. Personnel at satellite campuses will implement their evacuation / relocation plans if applicable.

The office of the Vice President for Business Affairs will notify the Assistant Vice President of Facilities Management and the Great Smoky Mountains Exposition Center.

As each instructor in each occupied classroom is alerted, the evacuation or relocation process will begin. It will be the instructor’s responsibility to lead his/her students to the appropriate area in that particular building or to the evacuation area. All persons are to be cautioned not to go outside during the emergency relocation process (i.e., severe weather outside).

The instructor, after being alerted and given appropriate instructions, will lead his/her students to safety in a calm, orderly fashion. This will be done by organizing the students in a single-file form with the instructor leading the group to the designated area. Students should be told not to push or run but walk at a normal, quick pace.
All office suites and other areas should be evacuated or relocated following the Emergency Evacuation Plan or Emergency Relocation Plan as appropriate.

Campus Police should complete the Emergency Evacuation/Relocation form. The form should be completed any time there is an emergency relocation or evacuation.

After regular business hours, notification should be made to all buildings through the most direct means. An emergency evacuation/relocation report should be completed to assure that all facilities receive proper notification. College administrators should also be notified as soon as possible.

28.02.06 Emergency Evacuation Plan

Emergency evacuation plans will be posted in appropriate locations (i.e., approved by the fire marshal) in the corridors of all buildings. Each plan will indicate the direction of travel from the rooms shown on the plan in the event it becomes necessary to evacuate the building as a result of fire or other emergency. Each instructor will be responsible for announcing to his/her students on a regular basis that there is an emergency evacuation plan for the building and that any time the fire alarm sounds the building will be evacuated. Students will be made aware of the evacuation plan location and instructed to follow this plan when evacuation of the building becomes necessary. Similarly, each department head will be responsible for ensuring employees under his/her supervision know the location of their related emergency evacuation plan and what to do in the event evacuation becomes necessary.

All persons evacuated from buildings should be escorted to the designated rally point, which is noted, on the Emergency Evacuation Plans posted in each building. Should the assigned area be in a hazardous zone, the on-scene supervisor or official in charge should assign a new rally point.

Evacuation of multiple level buildings should always begin with the upper level floor being evacuated first and continuing in a descending order until all floors have been evacuated.

Never return to an evacuated building (unless told to do so by an Emergency Resource Official).

Supervisory personnel in the immediate vicinity of the posted emergency evacuation plans will be responsible for ensuring that the plans are present in the appropriate locations. Supervisory personnel must notify the Plant Operations Department if the plan(s) for their area are defaced or otherwise need replacement.

28.02.07 Emergency Relocation Plan
Emergency relocation of multiple level buildings should always begin with the upper level floor being evacuated first and continue in a descending order until persons from all floors have been relocated.

Personnel should be assigned to escort groups to the relocation area. All persons moved to a relocation area during a tornado warning or similar emergency should be instructed to assume a seated position, knees drawn to the chest, head placed between knees, and hands on top of head. This position should be maintained until the danger has passed.

Should any standard relocation area be perceived as an area of threat, a new relocation area should be designated by the on-scene supervisor or official in charge of the incident.

The following evacuation patterns for each building on campus, together with the listed relocation areas, will be used in the event emergency relocation of college personnel becomes necessary (i.e., during a tornado warning).

1. PLANT OPERATIONS BUILDING
   Rally Point: Parking Lot O
   Primary Building Coordinator: Assistant Vice President of Facilities Management
   Secondary Building Coordinator: General Maintenance Mechanics Supervisor
   Refuge Area: No refuge area designated - one level building.
   Relocation Area: Technical Education Building, Room 150 or other designated area.
   Evacuation/Relocation Pattern:
      Plant Operations personnel will be advised of the emergency, and their assistance in leading groups to safety will be initiated. Those persons not assisting will be escorted to designated points of shelter and be given appropriate instructions.

2. COLLEGE CENTER BUILDING
   Rally Point: Parking Lot E
   Primary Building Coordinator: Vice President for Student Affairs
   Secondary Building Coordinator: Vice President for Information, Education and Technology and Administrative Services
   Refuge Area: No refuge area designated - Building has ramp access.
   Relocation Area: Hall behind gymnasium, basement, and empty stairwells leading to the basement if necessary.
Evacuation/Relocation Pattern:

Beginning with the third floor of the College Center, when alerted, students should be led by their instructor or other appropriate personnel in a calm, orderly fashion down the ramps. Similarly, employees will be escorted by designated personnel to the evacuation/relocation area down the ramps. The ramps are reinforced with steel and concrete and are without windows. If time does not permit getting to the relocation area, shelter may be taken in this area. However, unless instructed to take shelter in this area, the process should continue to the first floor.

After the third floor has been cleared as quickly as possible, the second floor occupants should follow the same pattern of evacuation/relocation. When these persons have been led to safety, the first floor occupants should follow the same evacuation/relocation procedure.

If possible, appointed officials should be stationed in the lobby area to lead groups to the relocation area.

3. JUDGE WILLIAM H. INMAN HUMANITIES COMPLEX
Rally Point: Parking Lot R
Primary Building Coordinator: Dean of Humanities
Secondary Building Coordinator: Secretary to the Dean of Humanities
Refuge Area: No refuge area designated - one level building.
Relocation Area: Music wing hall and art wing

Evacuation/Relocation Pattern:

Classes in the English wing should be alerted and evacuated first. In an orderly fashion, the classroom nearest the outside glass door will be led down the hall to the lobby area of the building and into the hall of the music wing. After these classes have been situated, personnel occupying the office suites will be alerted and escorted to the music wing hall. In addition, rooms that contain no windows along this hall may be filled. Classrooms and offices along this area may be evacuated into this area after the English wing has completed the process.

Classrooms in the art wing should be evacuated into the hall of the art wing. No one should pass from this area into the lobby area.

4. DOGGETT MATHEMATICS AND BEHAVIORAL/SOCIAL SCIENCES BUILDING
Rally Point: Area of Baseball Field
Primary Building Coordinator: Dean of Behavioral and Social Sciences
Secondary Building Coordinator: Division Secretary to the Dean
Refuge Area: No refuge area designated - building has ramp access.
Relocation Area: First floor halls at each end of the building.
Evacuation/Relocation Pattern:
Second floor occupants will be alerted first. Students should be led by their instructor or other appropriate personnel in a calm, orderly fashion down the stairwells at either end of the hall to the first floor. When these persons have been led to safety, the first floor occupants should follow the same procedure. Classrooms/labs should be evacuated first and then all occupied offices. All persons should proceed in an orderly fashion to the evacuation/relocation area. The stairwell and lobby area in the center of this building will not be used as passages or shelter areas.

5. CLIFFORD “BO” HENRY CENTER FOR BUSINESS AND TECHNOLOGY
Rally Point: Parking Lot J
Primary Building Coordinator: Dean of Technical Education
Secondary Building Coordinator: Dean of Health Programs
Refuge Area: Second floor, room 278 that will also allow use of a telephone.
Relocation Area: Auditorium, Room 150.
Evacuation/Relocation Pattern:
Second floor occupants will be alerted first. Students should be escorted down the stairwells at either end or the rear of the building to the first floor by the instructors or other appropriate personnel to the designated evacuation or relocation area. All other individuals should be escorted down the stairwells by appropriate personnel. The stairwell and lobby area in the center of this building will not be used as passages or shelter areas. After second floor occupants have been relocated, first floor occupants should follow the same procedure. Classrooms/ labs should be evacuated first and then all occupied offices. All persons should proceed in an orderly fashion to the evacuation/relocation area.

6. McGUFFIN-JOLLEY NATURAL SCIENCE BUILDING
Rally Point: Student Parking Lot Q
Primary Building Coordinator: Dean, Division of Natural Science
Secondary Building Coordinator: Learning Resource Center Specialist and Executive Aid
Refuge Area: No refuge area designated – building has ramp access.
Relocation Area: South interior hallway, first floor, located at the bottom of stairwell B.
Evacuation/Relocation Pattern:
Starting with the top floor, all persons should be evacuated or escorted to the designated area. When these persons have been led to safety, the first floor occupants should follow the same procedure.
7. R. JACK FISHMAN LIBRARY
Rally Point: Parking Lot R
Primary Building Coordinator: Dean of Library Services
Secondary Building Coordinator: Director of Library Services
Refuge Area: Third floor conference room that will also allow use of a telephone.
Relocation Area: First floor room 102 and adjacent hallway.
Evacuation/Relocation Pattern:
Beginning with the third floor, everyone should be escorted by designated personnel in a calm, orderly fashion down the stairwells at the front and in the center of the building to the exits on the second floor for evacuation. For relocation, the occupants should continue down the center stairwell to the relocation area on the first floor.
After the third floor has been cleared as quickly as possible, the second floor occupants should follow the same pattern of evacuation/relocation. When these persons have been led to safety, the first floor occupants should follow the appropriate evacuation/relocation procedure.

8. PUBLIC SAFETY CENTER
Rally Point: Driving Track
Primary Building Coordinator: Dean, Division of Public Safety
Secondary Building Coordinator: Assistant Professor of Criminal Justice
Refuge Area: No refuge area designated - one level building.
Relocation Area: Hallway in front of room 140, located on the Southeast side of the building.
Evacuation/Relocation Pattern:
Starting with classrooms, students should be escorted by instructors to the designated relocation or evacuation area. Similarly, designated personnel will escort employees to the evacuation or relocation area.

9. EAST TENNESSEE REGIONAL PUBLIC SAFETY CENTER CRIMINAL INVESTIGATION DIVISION
Rally Point: Driving Track
Primary Building Coordinator: Special Agent in Charge
Secondary Building Coordinator: Secretary to the Special Agent in Charge
Refuge Area: No refuge area designated - one level building.
Relocation Area: Stairwell near Classroom and Hallway A.
Evacuation/Relocation Pattern:
Starting with classrooms, students should be escorted by instructors to the designated relocation or evacuation area. Similarly, designated personnel will escort employees to the evacuation or relocation area.

10. INFORMATION CENTER / CAMPUS POLICE BUILDING
Rally Point: Parking Lot A
Primary Building Coordinator: Director of Campus Police
Secondary Building Coordinator: Campus Police Lieutenant
Refuge Area: No refuge area designated - one level building.
Relocation Area: Basement of College Center.
Evacuation/Relocation Pattern:
All civilians who are being evacuated or relocated from the Campus Police Building should be escorted to the relocation or evacuation area by designated personnel. Officers will continue to carry out duties.

11. SOFTBALL FIELD
Rally Point: Open Field across from entrance gate
Building Coordinator: Assistant Vice President of Facilities Management
Secondary Coordinator: General Maintenance Mechanical Supervisor
Refuge Area: No refuge area designated - one level building.
Relocation area: Interior dressing area.
Evacuation / Relocation Pattern:
All persons being evacuated or relocated from the Softball Field should be escorted inside the dressing facility for relocation purposes or to the designated rally point as appropriate.

12. BASEBALL FIELD
Rally Point: Parking Lot G located across from MBSS Southeast ramp.
Building Coordinator: Assistant Vice President of Facilities Management
Secondary Coordinator: General Maintenance Mechanical Supervisor
Refuge Area: No refuge area designated -one level building.
Relocation area: Interior dressing area
Evacuation / Relocation Pattern:
All persons being relocated or evacuated from the Baseball Field should be escorted inside the dressing facility for relocation purpose or to the designated rally point as appropriate.

13. GOLF/TURFGRASS LABORATORY
Rally Point: Parking Lot located in front of building
Building Coordinator: Assistant Vice President of Facilities Management
Secondary Coordinator: General Maintenance Mechanical Supervisor
Refuge Area: No refuge area designated -one level building.
Relocation area: Left, rear corner of classroom.
Evacuation / Relocation Pattern:
All persons being relocated or evacuated from the Golf/Turfgrass Laboratory building should be escorted inside the classroom for relocation purposes or to the designated rally point as appropriate.

14. OUTDOOR AREAS
Refuge Area: None designated
Relocation area: Move inside to the nearest building and associated relocation area.
Evacuation / Relocation Pattern:
Anyone outside and unable to get to a relocation area should seek shelter in a nearby depression such as a ditch, culvert, or ravine and should lie flat on the ground.

15. GREAT SMOKY MOUNTAINS EXPO CENTER
Rally Point: Front Parking Lot
Primary Building Coordinator: Executive Director of the Great
Secondary Building Coordinator: Executive Aid
Refuge Area: No refuge area designated – seating areas and arena floor exit to ground level.
Relocation Area: Stairwell in judges’ stand and building corners with roof supports.

Evacuation/Relocation Pattern:
Once alerted, all persons should be instructed and led to the designated evacuation or relocation area as necessary by staff and other appropriate personnel. Personnel should use the safest and most direct route to move people to the designated areas.

16. GREENEVILLE/GREENE COUNTY CENTER FOR HIGHER EDUCATION
Rally Point: Rhea Parking Lot
Primary Building Coordinator: Day - Dean of Greenville/Greene County Center for Higher Education
Evening - Campus Police Officer
Secondary Building Coordinator: Day - Associate Professor of Criminal Justice
Evening - Police Academy Duty Officers
Refuge Area: Refuge areas for the third through fifth floors are located in the alcove in front of main elevator on each floor. The refuge areas allow use of a telephone.
Relocation Area: First Floor Stairway located behind room 110.

Evacuation/Relocation Pattern:
Occupants on the fifth floor should be alerted first. All students should be escorted down the stairwells to the first floor by instructors, or other appropriate personnel, to the designated evacuation or relocation area. All other individuals should be escorted down the stairwells by appropriate personnel. The evacuation or relocation pattern should continue in a descending order until all persons from all floors have been relocated or evacuated. Classrooms/labs should be evacuated first and then all occupied offices. All persons should proceed in an orderly fashion to the evacuation/relocation area.

17. SEVIER COUNTY CAMPUS, MAPLES-MARSHALL HALL
Rally Point: Parking Lot by the flagpole
Primary Building Coordinator: Day - Dean of Sevier County Campus
                        Evening - Campus Police Officer
Secondary Building Coordinator: Day - Director of Educational Services Sevier County Campus
                        Evening - Secretary to the Dean
Refuge Area: Refuge areas for the second floor are located next to room 210 and room 214. The refuge areas allow use of a telephone.
Relocation Area: Room 126.
Evacuation/Relocation Pattern:
Second floor occupants will be alerted first. Students should be escorted down the stairwells at either end or the center of the building to the first floor by the instructors or other appropriate personnel to the designated evacuation or relocation area. All other individuals should be escorted down the stairwells by appropriate personnel. The stairwell at either end or center of the building will not be used as passages or shelter areas. After second floor occupants have been relocated, first floor occupants should follow the same procedure. Classroom/labs should be evacuated first and then all occupied offices. All persons should proceed in an orderly fashion to the evacuation/relocation area.

18. CLAIBORNE COUNTY EXTENSION
Rally Point: Student Parking Lot
Primary Building Coordinator: Director, Claiborne County Extension.
Secondary Building Coordinator: Secretary, Claiborne County Extension.
Refuge Area: No refuge areas designated – one level building.
Relocation Area: Rooms 103, 104, 105
Evacuation/Relocation Pattern:
When alerted, students should be led by their instructor or other appropriate personnel in a calm, orderly fashion to the designated area.

28.02.08 General Evacuation/Relocation Instructions

Group leaders such as instructors, department heads, and maintenance personnel should be aware that it is their responsibility to relay all necessary information and instructions to the group or groups to which they will be assigned. In addition, buildings and relocation areas should be reviewed carefully along with each evacuation pattern.
28.03 EXTERNAL DISASTER

28.03.01 Plan Intent

This section provides guidance for action in response to unusual disasters resulting in mass casualties from external sources and/or within the campus. The intent of this portion of the Emergency Preparedness Plan is to provide assistance in the time of emergency, to remove people from the disaster area or impending disaster area, and to provide for the needs of the evacuees.

Disasters may occur at any time on or surrounding the campuses of Walters State Community College, which may create varying degrees of damage, including human suffering, injury, death, and property damage. When the disaster is of sufficient magnitude to exceed campus reserves, it may be necessary for the City or County governments to provide personnel, equipment, and supplies to augment campus efforts in evacuating large segments of the population from the affected area. Sheltering, feeding, and caring for the needs of the evacuees during the evacuation period will be required.

28.03.02 Organization

To conduct emergency operations there must be a capability at local levels to monitor and to inform. The college President is the executive head and is responsible for the operation and management of the Emergency Preparedness Plan. The Vice President for Business Affairs is responsible for executing this plan.

The Campus Safety Administrator is responsible for all training and the maintenance of this Emergency Preparedness Plan. Each campus building will have a primary and a secondary building coordinator appointed by the President.

The Campus Police Office, because of its 24-hour service and telephone and radio capabilities to reach people, would most likely be the first to become aware of a disaster (i.e., chemical spills, explosions, flooded areas) or other disasters. The Campus Police, who are already in place and trained to maintain law and order, have an essential role in implementing certain measures, support plans, and training. The Director of Campus Police or his/her designee will notify the office of the Vice President for Business Affairs of a disaster situation and keep the office informed of all stages of progress. Therefore, on notification of a disaster, the Campus Police Office will take the following procedures:

1. Notify the local Emergency Dispatch Center for assistance.

2. Notify essential persons of the college community (i.e., President, Vice President, Assistant Vice President of Facilities Management, and all off-duty Campus Police officers if instructed to do so by
competent authority).

The Plant Operations Department will provide logistic support for the disaster area or impending area, including motor pool vehicles for use in the evacuation effort. If needed, they will assist in contacting other agencies in order to assure the acquisition of a sufficient quantity of vehicles in case of a large-scale evacuation. The Plant Operations Department will also provide logistic support of the disaster area or impending disaster area, including buildings, equipment, and services needed in the evacuation.

28.03.03 Concept of Operations

1. **Evacuations** – Procedures and responsibilities for evacuation of facilities are contained in the Emergency Evacuation Plan. Appropriate persons will coordinate the assembly of personnel and equipment for the purpose of evacuation. Requests for personnel, equipment, and supplies, regardless of the source, should flow through the Command Post to insure a coordinated evacuation effort and to insure the most judicious use of the resources needed to effect the evacuation. The Command Post will be the Campus Police Office, providing the disaster is not in the immediate area. If the Campus Police Office is within the hazard area, the Command Post will be an alternate facility to be determined at the time of the disaster or impending disaster by the on-scene supervisor.

   a. Initially, Campus Police personnel should coordinate evacuation of persons from the immediate area of danger or impending danger until shelter areas can be designated. Once shelter areas can be designated, Plant Operations personnel should direct evacuees to designated areas.

   b. When the evacuation efforts surpass the capabilities of the campus, the local Director of Civil Defense should be requested to mobilize the resources of the city, the county, and the State of Tennessee, as required to meet these needs.

2. **Movement From the Disaster Area** – The Campus Police Office is responsible for providing traffic management of vehicular movement within the disaster area to sheltered areas. The Campus Police Office should survey all feasible routes and designate those streets to be used as evacuation routes.

3. **Sheltered Areas** – Primary shelter areas when available, for natural disasters will be:
Morristown: The College Center. Secondary shelter area will be the Clifford “Bo” Henry Center for Business and Technology.

Expo Center: Administrative Area

Greeneville: First Floor – Administrative area.

Sevierville: Administrative Area.

Claiborne: Administrative Area.

When these areas are not available, new areas will be designated by the on-scene supervisor.

4. Care of the Evacuees – The Plant Operations Department should insure that the shelters are clean, sanitary, and properly supplied. The contracted Food Service should feed the evacuees. The Health Clinic or local medical service should provide medical assistance.

28.03.04 Tasks

The Director of Campus Police or his/her designee should:

1. Contact appropriate personnel for evacuation,

2. Survey the disaster area and surrounding areas to determine the most feasible routes for evacuation when needed,

3. Facilitate the clearing of evacuation routes,

4. Provide police coverage and traffic control along designated evacuation routes, and

5. Provide protection for property in evacuated areas. The Assistant Vice President of Facilities Management or his/her designee should:

a. Designate buildings to be used as shelter areas of evacuees,

b. Assign priority as to which buildings or shelters are to be filled,

c. Supervise and coordinate the efforts of those evacuees capable of working to assist in feeding and maintenance of
shelter area facilities, and

d. Provide qualified personnel to insure the sanitation of shelter areas.

The Contracted Food Service should:

1. Feed the evacuees, and

2. Furnish meals for personnel involved in the evacuation process.

The college nurse or E.M.T. personnel should:

1. Work in conjunction with local E.M.T. personnel in the selection of a location for Triage area, and

2. Provide medical attention to casualties of the disaster and coordinate the use of various hospitals, as necessary.

The Campus Police Office shall maintain a current list of emergency contacts in each building.

28.03.05 Operations

The Emergency Operations Center for all emergencies will be the Campus Police Office. The alternate location will be the Field Emergency Command Post mobile unit or patrol vehicle.

The following system is to provide warning of impending or existing emergencies and provide directions as to what action should be taken during the emergency.

1. Personnel in each building should be contacted by the assigned vice president or designee. If the telephone system is out of order, personnel will be notified in person.

2. If time does not permit implementation of the warning system above, fire alarm systems in each building may be activated to begin the evacuation procedure.

3. Warning of impending danger may come from other sources such as radio or television.

The following evacuation system is to provide for the orderly evacuation of college facilities:
1. When time permits responsibility for ordering an evacuation of the college rests with the college President or designee. Should there be a condition of imminent and immediate danger; the decision to evacuate may be made by Campus Police personnel or the on-scene supervisor.

2. When the campus evacuation is ordered, Campus Police personnel should direct traffic flow away from the danger area.

3. Evacuation drills and/or training will be conducted periodically in each building and at each satellite campus under the direction of the Campus Safety Administrator and in cooperation with the Campus Police, the building coordinators, and/or local emergency service agencies as needed. A report will be sent by the Campus Safety Administrator to the Director of Campus Police to be filed annually.

28.03.06 Nuclear Attack or Mishap

A nuclear attack or mishap is a national emergency, which will be declared and signaled by federal, state, or local authorities. The college will respond immediately in maximum effort with the exact course of action determined by the distance of the attack or mishap from this facility. In nuclear attack situations, the college will be subject to the coordinating authority of the Civil Defense authorities.

Upon notification by established authority that a mishap has occurred or attack is likely, the college president, or his designated alternate, will order the alerting of all to standby for possible call to their disaster assignments as detailed in earlier sections.

If attack is imminent (i.e., warning of attack already launched):

1. Students and staff will be instructed to move to designated relocation areas.

2. The building coordinator should ensure that the needs of all persons housed in the building are being addressed.

If the attack has not affected nearby areas, the college should continue normal operations, but will prepare to advance to an alert situation when notified.

28.03.07 Miscellaneous Threatening Conditions

1. Hazardous Materials – These procedures provide a plan of action to be undertaken in case of a hazardous materials accident or toxic
chemical spill.

a. In case of a discharge or potential discharge of toxic or explosive chemicals adjacent to the campus area, the local Fire Department will assess the situation and determine if a threat exists.

b. If evacuation of the campus is necessary, Campus Police personnel should direct the flow of traffic from immediate danger. This will depend on several factors including extent of spill, toxicity of the material, wind direction, and weather conditions.

c. If a chemical spill should occur in a lab or classroom, the following procedures should be initiated:

1. Notify the division office and the Campus Police Office as soon as possible,

2. Immediately cordon off the area and allow only essential emergency workers to enter,

3. Confine the hazardous materials as much as possible,

4. In no case should clean-up procedures begin until health hazards are known.

2. Severe Weather - This plan provides procedures to follow in the event that violent storm warnings are issued.

a. In the case of severe weather, the Campus Police Office will initiate the campus warning system as detailed in section 28.04 “Internal Disasters” of this manual.

b. A tornado watch is issued when the conditions are present for the formation of a tornado. The local National Weather Service will issue a watch bulletin to the local authorities as well as the local media (i.e., TV networks and radio stations). Weather radios should be monitored.

In case of a tornado watch, the following relocation plan will be initiated by the Campus Police Office:
1). The Chief of Police or his/her designee should alert the President of the college and/or the Vice President for Business Affairs, or other Administrative official of the threatening weather conditions.

2). The central point of communication during such a situation should be established in the Campus Police Office or other designated area. At this time, there should be direct communication with the city and county police departments relaying and exchanging information as needed. Also, reports on weather conditions by the National Weather Service will be constantly monitored and information dispatched as needed to all officers.

3). All divisions should be notified of the watch. It is the building coordinators or his/her designee’s responsibility to check his/her designated relocation area for preparedness and to notify the Chief of Campus Police of any conflict.

4). If possible, Police Officers will be posted at various points on campus as lookouts. It will be their responsibility to watch for any sudden changes in weather conditions in the area that may not be monitored by the weather service. If changes do occur, these officers should relay such information to the Chief of Police or his/her designee as quickly as possible. In turn, the Chief of Police or his/her designee should notify the city or county police departments of the change in conditions.

c. A tornado warning is issued when a tornado is actually sighted either visually or by radar. The relocation process should begin when the warning is for the immediate area or a tornado is sighted. All personnel should immediately evacuate auditoriums, gymnasiums, and large rooms with wide free span roofs. Stay clear of all windows and exterior doors. There will be no transfers of people to other buildings during a tornado warning. Detailed relocation procedures are outlined in previous Sections 28.02.05 and 28.02.07.
d. Campus Police personnel should pass the all-clear signal when the danger has passed.

28.04 INTERNAL DISASTER

28.04.01 Plan Intent

This portion of the Emergency Preparedness Plan is designed to cope with internal explosion, fire, or other catastrophe resulting in casualties to the college population. Objectives are to undertake immediate rescue and evacuation of casualties and trapped persons and provide access to emergency medical care and first aid. In the event that the emergency situation is of major proportion requiring care and treatment of a large number of casualties, the official in charge should activate the plan as outlined in the previous Section 28.03 “External Disasters” of this manual.

The following emergency procedures are to provide a formalized procedure to respond to emergencies as related to the internal and external constituents of the college. The primary focus is to establish policy and provide a communication network between the appropriate college personnel concerned with accurate and sufficient information as it relates to emergencies on campus. This portion of the Preparedness Plan covers the following areas:

1. Bomb threats,
2. Explosions,
3. Miscellaneous internal conditions,
4. Notification procedures in case of death or medical emergencies, and/or
5. Fires (i.e., see appropriate sections of this manual).

28.04.02 General Preparation

The following actions should be taken as indicated:

1. The Vice President for Academic Affairs has the responsibility for all academic buildings for purposes of executing these procedures. The Vice President for Academic Affairs should direct the building coordinators to:
   a. Familiarize him/herself with the emergency evacuation plans for their respective academic building, and
b. Organize all instructors and department heads, and brief them on their specific duties.

2. The Vice President for Student Affairs has the responsibility of executing these procedures for the College Center. The Vice President for Student Affairs should:
   a. Familiarize him/herself with the emergency evacuation plan for the College Center, and
   b. Organize all instructors and department heads, and brief them on their specific duties.

3. The Vice President for Business Affairs is responsible for the Plant Operations Building. The Vice President for Business Affairs should:
   a. Familiarize him/herself with the emergency evacuation plan for the Plant Operations Building, and
   b. Organize all employees and department heads, and brief them on their specific duties.

4. The Vice President of Business Affairs is responsible for the Great Smoky Mountains Expo Center for executing these procedures:
   a. Familiarize him/herself with the emergency evacuation plan for the Great Smoky Mountains Expo Center, and
   b. Organize all employees and supervisors and, brief them on their specific duties.

5. The Assistant Vice President for Academic Affairs and Dean of Evening and Distance Education is responsible for all satellite campuses. The Assistant Vice President for Academic Affairs and Dean of Evening and Distance Education should:
   a. Ensure the deans/directors for satellite campuses familiarize themselves with the emergency evacuation plan for satellite campuses.
   b. Ensure the deans/directors for satellite campuses organize all employees and department heads, and brief them on their specific duties.
These procedures provide guidance for the movement of faculty, staff, and students from an area of danger to comparative safety, prevent and report fires, and perform initial fire fighting.

1. Responsibilities – The Campus Police Office or its designated representative will:

   a. Inspect fire extinguishers on a monthly basis,

   b. Review building evacuation plans and make any recommendations for improvement, and

   c. In case of a fire; direct emergency operations until the local Fire Department arrives.

The building coordinators will comply with the provisions of the various sections of this manual concerning fire protection.

Faculty and staff will:

1. Know the location of fire alarm stations in the building housing their work area and how to activate them,

2. Know the location of the portable fire extinguishers in the building housing their work area and, if they have been trained, how to use them,

3. Be familiar with the evacuation procedures as outlined by their building coordinator, and

4. On discovering a fire:

   a. Activate the nearest fire alarm,

   b. Notify the Campus Police Office, which will contact the Fire Department and escort them to the location. If unable to contact Campus Police, call 9-911. If time and conditions permit, close windows and doors in the immediate area of the fire and notify personnel in the immediate area. Do not lock doors. Leave the building.

   c. All occupants of the building should leave the building when the fire alarm sounds and move to safe distance away
from the building (Refer to evacuation plan).

d. Stairways should be used when evacuating the building. 
**DO NOT USE THE ELEVATOR.**

28.04.04 Bomb Threats

These procedures provide written actions to follow in the event a threatening telephone call is received by the faculty or staff of the college.

1. Responsibilities – The individual receiving a bomb threat call should do the following:

   a. Remain calm and keep the caller on the line as long as possible. Ask the caller to repeat the message and record every word.

   b. If the caller does not indicate the location of the bomb or the time of detonation, ask for that information.

   c. Advise caller that the building is occupied and detonation could result in death or serious injury to innocent people. Attempt to gather information about the caller as listed below:

      1). Exactly what is said,

      2). Sex of person calling,

      3). Number of the telephone on which call is received,

      4). Time bomb is to go off,

      5). Reason bomb is placed in particular building,

      6). Method of identifying bomb,

      7). Name of person calling (if possible),

      8). Type of background noise (music, cars, trains etc), and

      9). Characteristics of the caller’s voice (type of accent, pronunciation of words, lisp, young or older person,
et al.)

d. Notify the Campus Police Office. Never attempt to inspect suspicious object or potential bomb.

2. **Notification** – the procedures to be followed are:

   a. The Campus Police Office will notify the following:

   1). Local Emergency 911 to alert police, fire and response units,

   2). Director of Campus Police or other Campus Police Supervisor,

   3). Office of the Vice President for Business Affairs, and

   4). Office of the President.

   b. If the situation warrants evacuation, the President or designee will notify the following personnel in all cases:

   1). Building coordinator or division personnel,

   2). Director of Campus Police,

   3). Assistant Vice President of Facilities Management, and

   4). Vice President for College Advancement.

   c. The following personnel should be notified as appropriate:

   1). Vice President for Academic Affairs – when an Academic building is involved.

   2). Vice President for Student Affairs -when the College Center is involved.

   3). Vice President for Business Affairs – when Plant Operations Building, Campus Police Building, or Expo Center is involved.

3. **Command and Control** – The procedures to be followed are:
a. Clear levels of authority will be established in threat areas. The Vice President for Business Affairs, if at the scene, will be in overall charge of search and evacuation procedures. If the Vice President for Business Affairs is off campus then the senior institutional official (SIO) at the site will assume overall responsibility.

b. The Director of Campus Police or his/her designee will request a bomb technician from local law enforcement to conduct a search. Campus Police will assist as requested by the EOD (Explosive Ordinance Demolition) unit.

c. The Command and Control Center for all emergency operations is the Campus Police Office. The alternate location is the Mobile Field Command Unit (patrol vehicle) or other designated area.

4. Response Team – This team should consist of:

a. Law enforcement Explosive Ordinance Demolition (EOD) personnel,

b. Campus Police Officer,

c. Local Police personnel (if needed),

d. Local Fire personnel,

e. Traffic Control, Campus Police Officers, and Local Law Enforcement Officers.

5. Building Search Procedures -

a. All personnel designated to respond to a bomb threat will report to the designated Command Post.

b. Only trained personnel from the Campus Police Office, administrative staff (if needed), the Morristown Police Department and/or Fire Department will be used as members of the Bomb Search Team. On occasion, the building coordinator or other employee(s) may be asked to assist by showing search team members any areas not subject to use (i.e., storage area).

c. Copies of building floor plans will be kept in the Plant Operations Office and the Campus Police Office. Plans will
be used by search teams as required. In addition, building construction blueprints may be required and these will be obtained from the Plant Operations Office.

d. Searches will be conducted in a systematic manner to ensure that the entire threat area is covered. All search team members will report to the Command Post upon completion of the search of their area of responsibility.

e. If a suspicious device is located, **DO NOT TOUCH OR MOVE IT.** The location of the device will be noted and the area clearly marked off. Explosive Ordinance Demolition (EOD) technicians will respond to the area where the device is located. If advised by EOD technicians, the search will continue to ensure other devices have not been placed in the area.

f. If building evacuation has not already been executed, order immediate evacuation of the area.

6. **Evacuation Procedures** –

An orderly evacuation will begin in accordance with requirements of the evacuation plan.

7. **Damage and Casualty Control** – The procedures to be followed are:

a. If evacuation is ordered, all personnel except those essential to the continued search for and/or removal of an explosive device will be removed from the building. Unauthorized personnel will be kept at a safe distance from the threat area (at least 300 yards).

b. It may become necessary for personnel to turn off all utilities to the threatened building(s).

c. No attempt will be made to remove a suspicious device prior to the arrival of the explosive experts.

8. **Re-entry into the Buildings** – Re-entry into evacuated buildings will be authorized by the Vice President for Business Affairs (or senior institutional representative).

9. **Explosions** – The procedures to be followed are:
a. If an explosion occurs, the person who discovers the explosion should immediately notify the Campus Police Office or call 9-911 and his/her immediate supervisor. The Campus Police Office will:

1). Notify the following immediately:
   a). Local Emergency 911 to request the assistance of the local Fire Department, Rescue Squad, and local Police Department.

2). The on-duty Campus Police Officer will:
   a). Notify the Director of Campus Police and the Vice President for Business Affairs.
   b). Protect the scene from unauthorized personnel pending investigation by police/arson investigators.

10. News Media - Inquiries from the news media will be referred to the Vice President for College Advancement or, in his absence, the senior administrative official at the scene. Other personnel should not discuss current developments with outsiders or insiders having no official responsibility.

11. Incident Report – If an incident occurs involving the above, an incident report will be prepared by the Campus Police Office and submitted to the Vice President for Business Affairs as soon as possible after the incident.

28.05 FIRE REGULATIONS

28.05.01 General

These procedures provide an Emergency Preparedness Plan for the safety of life and protection from hazards of fire in college facilities.

28.05.02 Fire Safety Responsibilities

Campus Police direct responsibilities include:

1. Taking action on all hazardous conditions reported,
2. Receiving and maintaining all records and reports pertaining to the emergency preparedness plan,

3. Making regular inspections of every college building, and

4. Maintaining a report of each fire occurring in college facilities.

Building coordinator responsibilities include:

1. Reporting all hazardous and unsafe conditions to the Campus Police Office,

2. Ensuring there are procedures to evacuate all personnel including individuals with disabilities,

3. Facilitate the training of faculty and staff in handling of fire procedures,

4. Having persons assigned to maintain order outside the building and to move students and personnel from roadways and away from the building in the event of an emergency evacuation,

5. Assisting, as necessary, fire department personnel at the scene of fire, and

6. In cooperation with the Safety Administrator, assist in conducting all fire drills.

Instructors’ responsibilities include:

1. Assisting building coordinators in performing their duties,

2. Reporting all hazardous and unsafe conditions to building coordinators,

3. Assisting in the evacuation of the building and the protection of property, and

All employees should:

1. Know the location of every emergency exit, evacuation route, fire alarm, and fire extinguishers for their work area,
2. Report conditions that might cause a fire to the building coordinator,
3. Call Campus Police Office in case of a fire (i.e., never assume alarm has been turned in),
4. Not fight a fire larger than one in a wastebasket,
5. In case of fire, leave at once by the safest exit and stay out of the building,
6. Know the operation of fire alarms for their work area, and
7. If properly trained, know when and how to use fire extinguishers.

28.05.04 Fire Protection Information/Procedures

It will be the responsibility of any person(s) seeing or suspecting a fire to pull the nearest alarm pull station and leave the building by the safest exit. Once the alarm is heard, the building coordinator or his/her designee will:

1. Immediately call the Campus Police Office or 9-911 for local-area emergency assistance,
2. Make reasonable effort without endangering their own life to assist with hall evacuation and to prevent the spread of fire by closing windows, doors, and all fire doors,
3. When the building is evacuated, keep anyone from re-entering the building and keep all persons a safe distance away from the building and maintain order, and
4. Direct appropriate personnel to the scene of the fire.

Once the Campus Police Office receives the call, the officer will:

1. Contact the Emergency 911 Center,
2. Dispatch available officers to the building to assist,
3. Meet and direct the fire department to the scene, and

4. Notify, when appropriate, the following:
   a. Office of the Vice President for Business Affairs,
   b. Office of the Vice President for Academic Affairs (i.e., as appropriate for academic buildings),
   c. Office of the Vice President for Student Affairs (i.e., if the College Center is the scene of the fire),
   d. Office of the Vice President for Business Affairs (i.e., if the Plant Operations Building or Great Smoky Mountains Expo Center is the scene of the fire),
   e. Office of the Vice President of College Advancement, and
   f. Office of the Assistant Vice President for Academic Affairs and Dean of Evening and Distance Education (i.e., if a satellite campus is the scene of the fire).

Clear levels of authority will be established by the senior official in charge at the scene and he/she will advise if any additional persons need to be notified. In case of a major fire, Campus Police personnel will block off and secure the area until the state/local fire investigator gets to the scene. After conferring with fire officials, the senior official at the scene will be responsible for making the decision as to when the building can be re-entered by the occupants.

Inquiries from the news media will be referred to the Vice President for College Advancement or, in his absence, the senior official at the scene. Other personnel will not discuss current developments with outsiders or insiders having no official responsibility.

28.06 OTHER EMERGENCY NOTIFICATION PROCEDURES

28.06.01 In Case of Death Off Walters State Campuses

If it is learned that a Walters State Community College student or employee died while off campus, notification should be made to the President, the appropriate administrative official, and the Vice President for College Advancement.

Investigation of the cause of death and notification of the family is the responsibility of the City Coroner or other appropriate public officials. The President or the Vice President for Student Affairs will contact the student’s parents, guardian, or
spouse (i.e., after the City Coroner has given permission) on behalf of the college. The President will determine the appropriate college notification procedure to be used to contact an employee victim’s next of kin. The Public Information Office will cooperate with the news media to provide basic public information regarding the student or employee.

28.06.02 In Case of Death On Walters State Campuses

If a student, faculty member, or other employee’s death occurs on one of Walters State’s campuses, the Campus Police Office will be notified immediately. This office will notify the President, the appropriate administrative official, and the Vice President for College Advancement. The Campus Police Office will notify the local policing agency. With permission of the Coroner, the President or the Vice President for Student Affairs will contact the student victim’s next of kin on behalf of the college. The President will determine the appropriate college notification procedure to be used to contact an employee victim’s next of kin. The Public Information Office will cooperate with the news media to provide basic public information on the student or employee and details of the incident.

28.06.03 In Case of Medical Emergency

If a student, a member of the faculty, or other employee is injured or is involved in a medical emergency (i.e., such as an auto accident, fall, fire, birth, fight, etc.) and is treated at the college’s Health Clinic or local hospital, the Campus Police Office should be notified. This office will notify the President, the appropriate administrative official, and the Vice President for College Advancement immediately if the situation is of a public nature that may involve investigation by the news media and/or other law enforcement agencies. This notification will detail the circumstances surrounding the emergency.

28.06.04 School Violence

The increasing prevalence of school violence has become a great concern. Often students will exhibit behaviors that can forewarn of impending actions or alert others to an emotional or social problem that may need to be addressed in an effort to prevent potential violence. Faculty, staff, and administrators are encouraged to report any suspicious student or visitor behaviors to their immediate supervisor and the Campus Police Office for further action, intervention, and documentation.

Instructors should be aware of students with the following characteristics: low self esteem, those who do not form long-term friendships or who are loners, verbal or written threats, elevated anger level, disrespect for others, confrontational, low frustration levels, emotionally distant. Often a student may express negative behaviors through essays,
speeches or by inadvertently “doodling” along the edges of notes or papers to be turned in to an instructor. Others may openly act out to draw attention to themselves during a class session.

Classrooms on the main campus are equipped with telephones, and satellite campuses have telephones located in strategic places for emergency contact. It is recommended, should an instructor be faced with a conflict and at a point the instructor has the situation under control and feels comfortable in accessing the telephone without escalating the situation at hand, that the number for Campus Police (x6752) be dialed and the statement “Could you bring the file to (Your Building and Room Number)”. This will signify to the officer or the switchboard operator that there is an emergency in the building and room specified. Officer will be dispatched to the location given. Officer will exercise caution and assess the situation before entry is made. Officer will make other notifications for assistance and emergency services as needed.

28.07 EVENING AND WEEKEND OPERATIONS

28.07.01 Evening and Weekend Operations

In the event an emergency requiring evacuation or relocation occurs during evening or weekend operations, primary responsibility for emergency notification rests with the Campus Police Department. In most occurrences, the Campus Police Office will be first alerted to impending disaster information. However, due to limited police personnel during these hours, the assistance of the Plant Operations Custodial staff may be requested during evening hours and local law enforcement during weekend hours. The following action should be taken:

Evening Operations:

1. Notify the Campus Police Office.

2. Campus Police will notify outside emergency service agencies of the incident. Time permitting, Evening and Distance Education will also be notified by Campus Police of the plan to evacuate or relocate.

3. Campus Police will notify the Custodian/Lead Worker for Evening Shift to provide instructions relative to evacuation or relocation.

4. Custodian/Lead Worker will contact and instruct other custodians in appropriate buildings to initiate the designated evacuation or relocation plan for the buildings occupied.
5. Custodial staff will begin notification to areas occupied in the building assigned. Evacuation or relocation should follow the outlined plan for the building.

6. When all persons in the building have been notified and the evacuation or relocation plan has been initiated, custodial staff will serve as the building coordinator.

Weekend Operations:

1. Notify the Campus Police Office.

2. On-duty campus police officers will contact local emergency services and begin notification to each building occupied of the plan to evacuate or relocate. If multiple buildings are occupied, the officer may designate instructors to assist in the notification of other buildings if needed or request local law enforcement officers to assist in notifications.

In all instances where Campus Police cannot be notified dial 9-911 to report the emergency.

28.08 HOSTAGE AND TERRORIST INCIDENTS

28.08.01 General

The threat of hostage or terrorist incidents involving weapons occurring in the campus environment has become a grim reality. Unfortunately these situations are random and unpredictable. It will be the responsibility of on duty Campus Police staff to secure the perimeter of the area occupied or affected by the intruder and call in trained Special Weapons and Tactics teams (SWAT), hostage negotiations teams and rescue personnel to begin rescue efforts.

In the event a hostage situation or an incident involving weapons occurs the following procedure should be followed:

1. Remain as calm as possible and try to keep those around you as calm as possible.

2. Individuals should carry out the instructions of the intruder until rescue attempts can be made.
3. Call x6752 or 9-911 to report activity taking place, if possible. However, rest assured that it is the intention of the intruder to make their presence known and, in most instances, to make demands.

4. All other individuals should retreat inside their respective classrooms or office areas, close and lock the door (also referred to as “lockdown”).

5. Remain in lockdown status, behind closed and locked doors, and await authorized police, SWAT team or WSCC personnel to approach the area for evacuation.

6. Again, remain as calm as possible and leave the building in a quiet, orderly fashion so as not to draw the attention of the intruder or escalate the ongoing situation.

7. **NO ALARMS SHOULD BE ACTIVATED.** Activation of an alarm could escalate the action or reaction of the intruder.

In all instances of terrorist attack, whether international or domestic, the purpose is to cause as much destruction and loss of life as quickly as possible. Such acts cause mass panic, chaos and confusion and instill fear in those remaining in the community affected as well as the nation as a whole. Such situations usually involve explosive, biological or chemical devices and may or may not be announced.

In the event of a terrorist attack the following procedure should be initiated:

1. The emergency preparedness plan for evacuating the building affected should immediately be initiated.

2. In this instance notifications may need to be made in person rather than via telephone.

3. **ALL CELL PHONES, AND TWO WAY RADIOS SHOULD BE TURNED OFF.** Signals from these communication devices can cause detonation of other explosives should explosives be involved.

4. Persons evacuating the building should leave the building in the opposite direction of the blast, avoiding areas possibly weakened by structural damage. Proceed to the designated rally point to await further instruction.
CHAPTER 29

POLYCHLORINATED BIPHENYL (PCB)
FEDERAL REGULATIONS

29.01. GENERAL

Polychlorinated Biphenyl (PCB) federal regulations apply to operations at universities and colleges as well as at other institutions and were designed to protect workers and others from exposure to these toxic chemicals. PCBs are an environmental and health concern because laboratory animal studies suggest that PCBs can cause reproductive effects and cancer in humans, they are resistant to degradation, and they accumulate in fatty tissue. In the early 1970s, the toxicity sediment, and human tissue samples, spurred worldwide concern about the continued use of PCBs. In 1976, this concern resulted in Congressional action to ban new production of PCBs under section 6 of the Toxic Substances Control Act (TSCA), which has been amended significantly three times, and strictly control the use and disposal of PCBs which had already been put into use.

In addition to concerns about the toxicity of PCBs themselves, the Environmental Protection Agency (EPA) also has serious concerns about the formation of extremely hazardous toxic chemicals during PCB transformer fires. Polychlorinated dibenzofurans (PCDFs) may be formed when PCBs are subject to the temperatures reached in transformers during electrical fires. PCDFs are chemically very similar to dioxins, which are among the most highly toxic chemicals known to man, and EPA believes that PCDFs may present similar environmental and human health risks. Once formed, these PCDFs can be widely distributed throughout the interior of buildings through ventilation equipment and ductwork. Steps must be taken to prevent such accidents with PCB transformers from occurring.

EPA has promulgated a number of regulations on PCB use and disposal during the past 10 years. These include:

1. Installation of additional PCB transformers in, or near, commercial buildings (including colleges and universities) is prohibited.

2. Owners must register existing PCB transformers with their local fire department.

3. PCB transformer areas must be marked.

4. Combustible materials cannot be stored within a PCB-transformer enclosure or within 5 meters of an unenclosed transformer.

5. Owners of PCB transformers which are involved in a fire must report the incident immediately to the U. S. Coast Guard National
Spill Response Center by calling 800-424-8802. (In Washington, DC call 426-2675).

6. Records and reports must be kept by owners, storers, and disposers of PCBs and PCB items.

7. The disposal of PCBs and PCB equipment is strictly regulated.

As of October 1, 1990:

1. The use of PCB units that EPA believes have a relatively high probability of electrical failure is prohibited.

2. Improved electrical protection must be installed on other PCB transformers.

29.02. PCB TRANSFORMERS

Walters State does not own and will not install a PCB transformer. The college leases electrical transformers from the local power company. All such transformers have been inspected and verified not to contain PCBs by the local power company. Records of this inspection and written verification of the results are on file in the Plant Operations Building.
30.01. INTRODUCTION

30.01.01. Objectives

Walters State Community College is committed to protecting the environment by better utilizing scarce resources through a comprehensive consumption and waste management program. Additionally, this program conforms to the requirements of the "Solid Waste Management Act of 1991" enacted by the Tennessee legislature (See Appendix 30.01.01.A.).

The consumption and waste management program’s procedures have been developed to assist the college community in purchasing, using, and disposing of products and materials in a manner that will best utilize these resources and minimize any negative impact on the environment. The objectives of these procedures are:

1. To encourage precycling by purchasing products containing recycled or easily recyclable materials,
2. To assist in reducing and, when possible, eliminating the use of disposable products,
3. To promote recycling and thereby significantly reduce the amount of recoverable/recyclable materials entering the college’s waste disposal system, and
4. To facilitate implementing effective resource utilization and waste management into the lifestyle of students, faculty, staff, and the community.

30.01.02. Functions and Responsibilities

The successful operation of the college’s consumption and waste management program is dependent upon the cooperative effort of the students, faculty, staff and the community. The functions and responsibilities of the various individuals and groups and their relation to the program are outlined as follows.

1. **College Administration** - The president oversees the administration of the consumption and waste management program through the normal chain of authority within the institution. The president
delegates to deans, divisional chairpersons, directors, and supervisors, the responsibility for ensuring appropriate work practices of those under their supervision to support the operation of the program.

2. The College Development and Safety & Health Committee - This committee is responsible for the development and maintenance of the policies and procedures of the consumption and waste management program. The committee members are expected to monitor the operations of the program and bring to the committee’s attention comments and/or suggestions concerning the program either from their own observations or observations of other individuals.

3. The Safety Administrators are responsible for surveillance of the program and its procedures to ensure the program’s operations do not adversely affect the safety and health of individuals and the college environment in general.

4. Other Individuals - The success of the consumption and waste management program at Walters State is dependent upon the conscientious efforts and cooperation of all individuals associated with the college, including but not limited to students, faculty, staff, and visitors. All individuals are expected to:

   a. Support and practice the procedures set forth in this section of the manual and other sections as may be appropriate (e.g., Chapter 25 "Hazardous Chemical Waste Management").

   b. Make a concerted effort to minimize the acquisition and/or use of products and to use recycled or easily recyclable products.

   c. Dispose of surplus and/or waste materials in accordance with established procedures.

   d. Communicate comments and/or suggestions concerning the program (i.e., to a supervisor, faculty member, or a College Development and Safety & Health Committee member).

5. External Agencies - The Cafeteria and Snack Bar Vendors should agree to support the college’s consumption and waste management program. Such vendors and their employees should adhere to the
program’s procedures whenever appropriate and/or possible.

30.02. CONSUMPTION MANAGEMENT

30.02.01. Introduction

Consumption management can directly and positively affect the college’s recycling and waste disposal programs. Primarily, care and attention to detail on the part of all the college’s community in the purchase and use of products and materials can reduce source consumption and disposal of waste. Using precycling concepts, individuals can actively participate in recycling and promote recycling objectives. Minimizing the use of, and reusing where possible, products and materials will reduce consumption and disposal of waste. Precycling and use minimization and their relationship to the purchasing process are outlined in the next two sections.

30.02.02. Precycling

Precycling involves the purchase of products containing recycled or easily recyclable materials. Examples of precycling include:

1. Buying products packaged in recycled materials and/or materials that are easily recyclable (look for recycle sign),
2. Purchasing products made of recycled materials and/or materials that are easily recyclable,
3. Buying reusable products, such as batteries, and
4. Purchasing white writing pads instead of yellow pads to minimize de-inking processes.

30.02.03. Use Minimization

Minimizing the use, and when possible, eliminating the use of disposable products will reduce source consumption and waste disposal. Examples of use minimization include:

1. Communicating through computer networks instead of paper memos,
2. Using microforms instead of bulky hardcopy materials,
3. Printing or copying on both sides of a sheet of paper,
4. Using organic (recycled leaves) rather than chemical fertilizing processes,
5. Encouraging minimum packaging,
6. Repeating the use of materials (notepads made from previously used paper, and reusing plastic binders extracted from recycled reports),
7. Ordering only what is needed (economy of large size orders may generate and require disposal of unneeded excess),
8. Considering a reduction in the scale and/or type of use (micro-technology in experiments and computer simulation/modeling), and
9. Being cognizant of "shelf-life" to avoid deteriorated and, therefore, unusable materials.

30.03. WASTE DISPOSAL MANAGEMENT

30.03.01. Introduction

This section of the manual is concerned with disposal of solid wastes. Chapter 25 "Hazardous Chemical Waste Management" should be consulted for the proper disposal of hazardous chemical wastes.

Solid waste is divided into two categories; recyclable materials and non-recyclable materials. Based on market demand, relative ease of source separation, available volumes of recyclable materials, and requirements of the local waste collection company, recyclable materials consist of:

1. Corrugated cardboard, and
2. Paper products including newspapers, computer paper (both shredded and non-shredded), gloss and non-gloss finished paper, and white and colored sheet paper but excluding laser printed paper, carbon paper, post-it (self-sticking removable) note paper, FAX paper, food wrappers, and paper products that are glued together (e.g., magazines) or held together with a plastic binder (e.g., reports), and hard cover and paperback books. Paper products that are stapled together are acceptable with the staples in place as
are other paper products if the glued portion or plastic binder is
removed.

The disposal methods for each type of waste and special recycling activities are
outlined in the following sections.

30.03.02. Corrugated Cardboard

Corrugated cardboard materials are to be placed in the appropriate container at the
loading dock of the College Center or compiled into one area within a particular suite of
offices. Each day custodial staff will collect any accumulated corrugated cardboard and
place it in the container reserved for such recyclable material. Periodically, the local
waste collection company will empty the receptacle and process the corrugated cardboard
for recycling.

30.03.03. Paper Products

Certain office suites and building corridors will be provided with a recyclable
waste paper receptacle and a non-recyclable waste (trash) container. The office suite
recyclable waste paper receptacle should be used for bulky recyclable waste paper
products. These receptacles are to be requested through the Plant Operations Department.

Upon request, also to the Plant Operations Department, each employee will be
provided with a recyclable waste paper receptacle and a non-recyclable waste (trash) can.
The employee must place his/her non-recyclable waste in his/her non-recyclable waste
(trash) can and his/her recyclable paper products in the recyclable waste receptacle.

As part of their normal duties, custodial staff will collect recyclable waste paper
products from a centralized location. The collected recyclable waste paper products will
be placed in specially identified areas for local waste company collection.

Waste paper products that are regarded as confidential must be shredded before
being made available for disposal. The shredded paper is to be accumulated in
appropriate plastic bags and the bags grouped together in close proximity to the
shredding machine. Custodial staff will collect all such bags and place them in the
recyclable waste paper dumpsters.

30.03.04. Specialized Recycling Activities

As may be deemed appropriate, specialized recycling activities may be conducted
at the college. Such activities and the participation procedures will be announced to the
college community.
Examples of specialized activities could include:

1. Recycling of telephone directories, and
2. Collecting paperback and hard cover books for re-use.

30.03.05. Non-Recyclable Waste

The non-recyclable waste (trash) containers will be emptied by the custodial staff and placed in non-recyclable waste (trash) dumpsters (i.e., one dumpster for each of the four main buildings). The local waste collection company will collect and process the non-recyclable waste (i.e., most likely buried in the local landfill).

30.04. EDUCATIONAL PROGRAMS

30.04.01. General

The faculty and academic administrators are responsible for assuring adequate treatment of issues relating to waste management, source reduction, and recycling is provided in selected academic programs and/or courses.
31.01. INTRODUCTION

One of the major goals of the Occupational Safety and Health Administration (OSHA) is to “regulate facilities where work is carried out … to promote safe work practices in an effort to minimize the incidence of illness of injury experienced by employees.” Relative to this goal, OSHA has enacted the Bloodborne Pathogens Standard, codified as 29 CFR 1910.1030. The purpose of the Bloodborne Pathogens Standard is to “reduce occupational exposure to Hepatitis B and C Virus (HBV, HCV), Human Immunodeficiency Virus (HIV) and other bloodborne pathogens” that employees may encounter in their workplace.

Walters State Community College believes that there are a number of “good general principles” that should be followed when working with bloodborne pathogens. These include:

1. It is prudent to minimize all exposure to bloodborne pathogens,

2. Risk of exposure to bloodborne pathogens should never be underestimated, and

3. The college should institute as many engineering and work practice controls as possible to eliminate or minimize employee exposure to bloodborne pathogens.

This Exposure Control Plan has been implemented to meet the letter and intent of the OSHA Bloodborne Pathogens Standard. The objective of this plan is twofold:

1. To protect employees from the health hazards associated with bloodborne pathogens.

2. To provide appropriate treatment and counseling should an employee be exposed to bloodborne pathogens.

31.02. GENERAL PROGRAM MANAGEMENT

31.02.01 Responsible Persons
There are four major “Categories of Responsibility” that are central to the effective implementation of the Exposure Control Plan. These are:

1. The “Exposure Control Officer”,

2. Department Managers and Supervisors,

3. Education/Training Instructors, and

4. Employees.

The following sections define the roles played by each of these groups in carrying out the plan. (Throughout this written plan, employees with specific responsibilities are identified. If, because of promotion or other reasons, a new employee is assigned any of these responsibilities, the Director of Human Resources and College Nurse are to be notified of the change, so that they can update their records).

31.03. EXPOSURE CONTROL OFFICER

The “Exposure Control Officer” will be responsible for overall management and support of the college’s Bloodborne Pathogens Compliance Program. Activities, which are delegated to the Exposure Control Officer typically include, but are not limited to:

1. Overall responsibility for implementing the Exposure Control Plan for the entire college,

2. Working with administrators and other employees to develop and administer any additional bloodborne pathogens-related policies and practices needed to support the effective implementation of this plan,

3. Looking for ways to improve the Exposure Control Plan, as well as to revise and update the plan when necessary,

4. Collecting and maintaining a suitable reference library on the Bloodborne Pathogens Standard and bloodborne pathogens safety and health information,

5. Knowing current legal requirements concerning bloodborne pathogens,

6. Acting as the college liaison during related OSHA inspections, and

7. Conducting annual college audits to maintain an up-to-date Exposure Control Plan.
The Director of Human Resources has been appointed as the college’s Exposure Control Officer.

The Exposure Control Officer will require assistance in fulfilling his/her responsibilities. To assist the Exposure Control Officer in carrying out his/her duties, the college has delegated this responsibility to the College Development, Safety and Health Committee.

31.03.01 College Development, Safety and Health Committee

For a list of Representatives of the Committee see Appendix 31.03.01.A.

31.04. DEPARTMENT MANAGERS AND SUPERVISORS

Department Managers and Supervisors are responsible for exposure control in their respective areas. They work directly with the Exposure Control Officer, the Infection Control Department, and employees to ensure that proper exposure control procedures are followed.

31.05. EDUCATION/TRAINING COORDINATOR

The Education/Training Coordinator will be responsible for providing information and training to all employees who have the potential for exposure to bloodborne pathogens. Activities falling under the direction of the Coordinator include:

1. Maintaining an up-to-date list of college personnel requiring training (i.e., in conjunction with facility management),
2. Developing suitable education/training programs,
3. Scheduling periodic training seminars for employees,
4. Maintaining appropriate training documentation such as, “Sign-in Sheets”, discussion quiz, etc., and
5. Periodically reviewing the training programs with the Exposure Control Officer, Department Managers, and Supervisors to include appropriate new information.

The College Nurse has been selected to be the college’s Education/Training Coordinator for the Exposure Control Plan.
31.06. EMPLOYEES

As with all college activities, employees have the most important role in the Bloodborne Pathogens Compliance Program for the ultimate execution of much of the Exposure Control Plan rests in their hands. In this role they must do things such as:

1. Know what tasks they perform that have occupational exposure,
2. Attend the bloodborne pathogens training sessions,
3. Plan and conduct all operations in accordance with college work practice controls, and
4. Develop good personal hygiene habits.

31.06.01 Availability of the Exposure Control Plan to Employees

To help college employees with their efforts, the college’s Exposure Control Plan is available to them at any time. New employees are advised of this availability during their new employee orientation session.

31.07. REVIEW AND UPDATE

It is important to keep the Exposure Control Plan up-to-date. To ensure this, the plan will be reviewed and updated under the following circumstances:

1. Annually, on or before June 30th of each year,
2. Whenever new or modified tasks and procedures are implemented which affect occupational exposure of employees,
3. Whenever employees’ jobs are revised such that new instances of occupational exposure may occur, and
4. Whenever new functional positions are established within the college that may involve exposure to bloodborne pathogens.
5. To reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens,
6. Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure,
7. Solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and document the solicitation in the Exposure Control Plan.

31.08 EXPOSURE DETERMINATION

31.08.01 Potential Exposure Lists

One of the keys to implementing a successful Exposure Control Plan is to identify exposure situations employees may encounter. To facilitate this at the college, the following lists have been prepared:

1. Job classifications in which all employees have occupational exposure to bloodborne pathogens,

2. Job classifications in which some employees have occupational exposure to bloodborne pathogens, and

3. Tasks and procedures in which occupational exposure to bloodborne pathogens occur (i.e., these tasks and procedures are performed by employees in the job classifications shown on the two previous lists).

The initial lists were compiled on or before May 5, 1992. The Director of Human Resources will work with department managers and supervisors to revise and update these lists as tasks, procedures, and classifications change. The lists are maintained in the Office of Human Resources. Sample lists are shown in Appendices 31.08.01A-D.

31.09 METHODS OF COMPLIANCE

31.09.01 General

There are a number of areas that must be addressed in order to effectively eliminate or minimize exposure to bloodborne pathogens at the college. The first five areas dealt with in the plan are:

1. The use of Universal Precautions,
2. Establishing appropriate Engineering Controls,

3. Implementing appropriate Work Practice Controls,

4. Using necessary Personal Protective Equipment, and

5. Implementing appropriate Housekeeping Procedures.

Each of these areas is reviewed with employees during their bloodborne pathogens-related training (i.e., see the Information and Training section of this plan for additional information). By rigorously following the requirements of OSHA’s Bloodborne Pathogens Standard in these five areas, it is felt that the college will eliminate or minimize employees occupational exposure to bloodborne pathogens as much as is possible.

31.09.02 Universal Precautions

At Walters State the practice of “Universal Precautions” is observed to prevent contact with blood and other potentially infectious materials. As a result, all human blood and the following body fluids are treated as if they are known to be infectious for HBV, HCV, HIV, and other bloodborne pathogens:

1. Semen,

2. Vaginal secretions,

3. Cerebrospinal fluid,

4. Synovial fluid,

5. Pleural fluid,

6. Pericardial fluid,

7. Peritoneal fluid,

8. Aminotic fluid,

9. Saliva (dental procedures), and

10. Any body fluid visibly contaminated with blood (e.g., vomit).

In circumstances where it is difficult or impossible to differentiate between body fluid types, all body fluids are assumed to be potentially infectious.
The Director of Human Resources and the College Nurse are responsible for overseeing the Universal Precautions Program.

31.09.03 Engineering Controls

One of the key aspects to the Exposure Control Plan is the use of Engineering Controls to eliminate or minimize employee exposure to bloodborne pathogens. As a result, Walters State employs equipment such as sharps disposal containers, self-sheathing needles, and ventilating laboratory hoods as appropriate.

The College Nurse periodically works with department managers and supervisors to review tasks and procedures performed at Walters State where engineering controls can be implemented or updated. As part of this effort, a facility survey was completed identifying three things:

1. Areas where engineering controls are currently employed,
2. Areas were engineering controls can be updated, and
3. Areas currently not employing engineering controls, but where engineering controls could be beneficial.

The results of this survey formed the basis to develop the Engineering Control Equipment Log. A sample of the log is shown in Appendix 31.09.03A.

The log is re-examined during the annual Exposure Control Plan review and opportunities for new or improved engineering controls are identified. Any existing engineering controls are also reviewed annually in conjunction with the appropriate department manager or supervisor for proper functioning and needed repairs or replacement of equipment.

In addition to the engineering controls identified in the log, the following engineering controls are used throughout Walters State:

1. Handwashing facilities (i.e., sinks and soap and water or, when in the field, antiseptic hand cleansers and towels or antiseptic towelettes), which are readily accessible to all employees who have the potential for exposure,
2. Self-sheathing needles,
3. Containers for contaminated reusable sharps having the following characteristics:
31.09.04 Work Practice Controls

In addition to engineering controls, Walters State uses a number of Work Practice Controls to help eliminate or minimize exposure to bloodborne pathogens. Many of these Work Practice Controls have been in effect for some time.

The employees at Walters State who are responsible for overseeing the implementation of these Work Practice Controls are the Director of Human Resources and the College Nurse. They work in conjunction with department managers, supervisors, and the college’s training coordinators to effect this implementation.

Walters State has adopted the following Work Practice Controls as part of the Bloodborne Pathogens Compliance Program:

1. Employees wash their hands immediately, or as soon as feasible, after removal of gloves or other personal protective equipment,

2. Following any contact of body areas with blood or any other infectious materials after an exposure incident, employees wash their hands and any other exposed skin with soap and water as soon as possible. They also flush exposed mucous membranes with water,

3. Contaminated needles and other contaminated sharps are immediately disposed of in sharps containers,

4. Eating, drinking, smoking, applying cosmetics, or lip balm and handling contact lenses are prohibited in work areas where there is potential for exposure to bloodborne pathogens,
5. Food and drink are not kept in refrigerators, freezers, on countertopss, or in other storage areas where blood or other potentially infectious materials are present,

6. Mouth pipetting/suctioning of blood or other infectious materials is prohibited,

7. All procedures involving blood or other infectious materials should minimize splashing, spraying, or other actions generating droplets of these materials,

8. Specimens of blood or other materials are placed in designated leak-proof containers and the containers are appropriately labeled for handling and storage,

9. If outside contamination of a primary specimen container occurs, that container is placed within a second leak-proof container and the container is appropriately labeled for handling and storage. (If the specimen can puncture the primary container, the secondary container must be puncture resistant as well), and

10. Equipment, which becomes contaminated, is examined prior to servicing or shipping and decontaminated as necessary (i.e., unless it can be demonstrated that decontamination is not feasible).
   a. An appropriate biohazard warning label is attached to any contaminated equipment, identifying the contaminated portions.
   b. Information regarding the remaining contamination is conveyed to all affected employees, the equipment manufacturer and the equipment service representative prior to handling, servicing, or shipping.

When a new employee starts at Walters State, or an employee changes jobs within the college, the following process takes place to ensure that they are trained in the appropriate Work Practice Controls:

1. The employee’s job classification and the tasks and procedures that they will perform area checked against the Job Classifications and Tasks Lists which have been identified in the Exposure Control Plan as those in which occupational exposure occurs,
2. If the employee is transferring from one job to another within the college, the job classifications and tasks/procedures pertaining to their previous position are also checked against these lists,

3. Based on this “cross-checking”, the new job classifications and/or tasks and procedures which will bring the employee into occupational exposure situations are identified, and

4. The employee is then trained by the Facility Training Coordinator or another instructor regarding any work practice controls that the employee is not experienced with.

31.09.05 Personal Protective Equipment

Personal Protective Equipment is the employees’ “last line of defense” against bloodborne pathogens. Because of this, Walters State provides (i.e., at no cost to the employee) the personal protective equipment that they need to protect themselves against such exposure. This equipment includes, but is not limited to:

1. Gloves,
2. Gowns,
3. Face shields/masks,
4. Goggles,
5. Mouthpieces,
6. Resuscitation bags,
7. Pocket masks, and
8. Hand washing material.

Hypo-allergenic gloves, glove liners, and similar alternatives are readily available to employees who are allergic to the gloves Walters State normally provides.

The College Nurse and the Assistant Vice President of Facilities Management, working with department managers and supervisors, are responsible for ensuring that all departments and work areas have appropriate personal protective equipment available to employees.

Employees are trained regarding the use of the appropriate personal protective equipment for their job classifications and tasks/procedures they perform. Initial training about personal protective equipment been completed at Walters State. Additional
training is provided, when necessary, if an employee takes a new position or new job functions are added to his/her current position.

To determine whether additional training is needed, the employee’s previous job classification and tasks are compared to those for any new job or function that they undertake. Any needed training is provided by their department manager or supervisor working with the college Training Coordinator.

To ensure that personal protective equipment is not contaminated and is in the appropriate condition to protect employees from potential exposure, Walters State adheres to the following practices:

1. All personal protective equipment is inspected periodically and repaired or replaced as needed to maintain its effectiveness,

2. Reusable personal protective equipment is cleaned, laundered, and decontaminated as needed. Whenever possible, laundry appliances on campus should be used. In those instances when off-campus cleaning is required, arrangements must be made through the Business Office and appropriate safe handling of contaminated personal protective equipment must be exercised (e.g., use of biohazard bags and labeling), and

3. Single-use personal protective equipment (i.e., or equipment that cannot, for whatever reason, be decontaminated) is disposed of by forwarding that equipment to the Health Clinic.

To make sure that this equipment is used as effectively as possible, our employees adhere to the following practices when using their personal protective equipment:

1. Any garments penetrated by blood or other infectious materials are removed immediately, or as soon as feasible, and the garments must be cleaned, laundered, or decontaminated as outlined in paragraph 2 immediately above,

2. All personal protective equipment is removed prior to leaving a work area,

3. Gloves are worn in the following circumstances:
   a. Whenever employees anticipate hand contact with potentially infectious materials,
   b. When performing vascular access procedures, and
   c. When handling or touching contaminated items or surfaces,
4. Disposable gloves are replaced as soon as practical after contamination or if they are torn, punctured, or otherwise lose their ability to function as an “exposure barrier”,

5. Utility gloves are decontaminated for reuse unless they are cracked, peeling, torn, or exhibit other sign of deterioration, at which time they are disposed of,

6. Masks and eye protection (e.g., goggles and face shields) are used whenever splashes or sprays may generate droplets of infectious materials,

7. Protective clothing (e.g., gowns and aprons) is worn whenever potential exposure to the body is anticipated, and

8. Surgical caps/hoods and/or shoe covers/boots are used in any instances where “gross contamination” is anticipated (e.g., such as autopsies and orthopedic surgery).

31.09.06 Housekeeping

Maintaining facilities in a clean and sanitary condition is an important part of the Bloodborne Pathogens Compliance Program. To facilitate this, a written schedule has been set up for cleaning and decontamination of the various areas of the college. The schedule (i.e., see Appendix 31.09.06A) provides the following information:

1. The area to be cleaned/decontaminated,

2. Day and time of scheduled work,

3. Cleansers and disinfectants to be used as specified on the following departmental cleaning schedules, and

4. Any special instructions that are appropriate.

Using this schedule, the housekeeping staff employs the following practices:

1. All equipment and surfaces are cleaned and decontaminated after contact with blood or other potentially infectious materials:
   a. After the completion of medical procedures,
   b. Immediately (i.e., or as soon as feasible) when surfaces are overtly contaminated,
c. After any spill of blood or infectious materials, and
d. At the end of the work shift if the surface may have been contaminated during that shift.

2. Protective coverings (e.g., plastic wrap, aluminum foil, or absorbent paper) are removed and replaced:
   a. As soon as it is feasible when overtly contaminated, and
   b. At the end of the work shift if they may have been contaminated during the shift.

3. All pails, bins, cans, and other receptacles intended for use are routinely inspected, cleaned, and decontaminated as soon as possible if visibly contaminated,

4. Potentially contaminated broken glassware is picked up via mechanical means (e.g., dustpan and brush, tongs, and forceps), and

5. Contaminated reusable sharps are stored in containers that do not require “hand processing”).

The Assistant Vice President of Facilities Management is responsible for setting up the cleaning and decontamination schedule and making sure it is carried out within the college. The schedule is maintained in the Plant Operations Office.

Care is exercised in handling regulated waste (i.e., including contaminated sharps, laundry, use bandages, and other potentially infectious materials). The following procedures are used with all of these types of wastes:

1. They are discarded or “bagged” in containers that are:
   a. Closeable,
   b. Puncture-resistant,
   c. Leak-proof if the potential for fluid spill or leakage exists, and
   d. Red in color or labeled with the appropriate biohazard warning label.
2. Containers for this regulated waste are located in the Health Clinic bathroom, within easy access of employees and as a central location to the sources of the waste,

3. Waste containers are maintained upright, routinely replaced and not allowed to overfill. Walters State has a contract with Tidi Waste System for waste disposal,

4. Contaminated laundry is handled as little as possible and is not sorted or rinsed where it is used, and

5. Whenever employees move containers or regulated waste from one area to another, the containers are immediately closed and placed inside an appropriate secondary container if leakage is possible from the first container.

Plant Operations Custodial staff are responsible for the collection and handling of college contaminated waste.

31.10. HIV, HBV AND HCV LABORATORIES AND PRODUCTION FACILITIES

This institution recognizes that there are special requirements for HIV, HBV and HCV research laboratories and production facilities in the areas of construction, engineering controls, work practices, the use of containment equipment as well as employee education and training. However, since the laboratories at Walters State are clinical in nature, these special requirements do not apply. Therefore, the college’s Exposure Control Plan does not address these requirements.

31.11 HEPTATIS B VACCINATION, POST-EXPOSURE EVALUATION AND FOLLOW-UP

31.11.01 General

Everyone at Walters State recognizes that even with good adherence to all of the college’s exposure prevention practices, exposure incidents can occur. As a result, the college has implemented a Hepatitis B Vaccination Program, as well as set up procedures for post-exposure evaluation and follow-up should exposure to bloodborne pathogens occur.

31.11.02 Vaccination Program
To protect employees as much as possible from the possibility of Hepatitis B infection, Walters State has implemented a vaccination program. This program is available, at no cost, to all employees who have occupational exposure to bloodborne pathogens.

The vaccination program consists of a series of three inoculations over a six-month period. As part of their bloodborne pathogens training, employees have received information regarding Hepatitis vaccination, including its safety and effectiveness. The Hepatitis vaccine is given in the deltoid and produces protective antibody (anti-HBs) in 90% of healthy persons.

The College Nurse is responsible for setting up and operating the vaccination program.

Vaccinations are performed under the supervision of a licensed physician or other healthcare professional. Prior to being vaccinated, the employee must have written approval from a physician stating that the employee can receive the vaccine. Details of employees taking part in the vaccination program are listed on a Hepatitis B Vaccine Log (i.e., see Appendix 31.11.02A) maintained by the College Nurse. Employees who have declined to take part in the program are listed as well, and have signed the “Vaccination Declination Form” (i.e., see Appendix 31.11.02B).

For those who received the first dose on or after February 15, 2000, the employee will be offered a titer one to two months after the third dose. If the employee chooses to have the titer, the blood will be tested at a CLIA-certified laboratory. If the antibody shows no (or low) response, the employee will be offered a repeat series of three doses. Again, the employee may choose to decline and may sign the declination at that time. One or two months after the completion of the second series, the titer will again be offered, but may be declined. The vaccine and the titers will be free of charge to the employee. If there is still no (or low) response, the employee will be advised to seek a medical evaluation.

To ensure that all employees are aware of the vaccination program, it is thoroughly discussed in bloodborne pathogens training. “Vaccination Notices” have also been given to division supervisors. Employees are given appointments for the vaccination. Memos are sent as reminders.

31.11.03 Post-Exposure Evaluation and Follow-Up

If an employee is involved in an incident where exposure to bloodborne pathogens may have occurred, there are two areas that efforts are immediately focused upon:

1. Investigating the circumstances surrounding the exposure incident, and
2. Making sure that Walters State employees receive medical consultation and treatment (i.e., if required) as expeditiously as possible.

The immediate supervisor, Human Resources Office, and the College Nurse investigate every exposure incident that occurs at Walters State. This investigation is initiated with twenty-four hours after the incident occurs and involves gathering the following information:

1. When the incident occurred,
   a. Date and time,

2. Where the incident occurred,
   a. Campus Center, building and room number,

3. What potentially infectious materials were involved in the incident,
   a. Type of material (e.g., blood and amniotic fluid),

4. Source of the material,

5. Under what circumstances the incident occurred,
   a. Type of work being performed,

6. How the incident was caused,
   a. Accident, and
   b. Unusual circumstances (e.g., equipment malfunction and power outage),

7. Personal protective equipment being used at the time of the incident, and

8. Actions taken as a result of the incident,
   a. Employee decontamination,
   b. Cleanup, and
   c. Notification made.
After this information is gathered and it is evaluated, a written summary of the incident and its causes is prepared and recommendations are made for avoiding similar incidents in the future. To help with this, the Incident Investigation Form, shown in Appendix 31.11.03A, is completed.

In order to make sure that employees receive the best and most timely treatment if any exposure to bloodborne pathogens should occur, Walters State has set up a comprehensive post-exposure evaluation and follow-up process. The checklist, shown in Appendix 31.11.03B, is used to verify that all steps in the process have been taken correctly. This process was implemented on or before July 6, 1992, and is overseen by the following people:

1. Executive Director for Human Resources and Affermative Action Officer,
2. College Nurse, and
3. Supervisor of employee involved.

The college recognizes that much of the information involved in this process must remain confidential, and will do everything possible to protect the privacy of the people involved.

As the first step in this process, an exposed employee will be provided with the following confidential information:

1. Documentation regarding the routes of exposure and circumstances under which the exposure incident occurred, and
2. Identification of the source individual (i.e., unless infeasible or prohibited by law).

Next, if possible, a recommendation will be made to the source individual to have his/her blood tested to determine HBV, HCV and HIV infectivity. This information will also be made available to the exposed employee, if it is obtained. At that time, the employee will be made aware of any applicable laws and regulations concerning disclosure of the identity and infectious status of a source individual.

Once these procedures have been completed, an appointment is arranged for the exposed employee with a qualified healthcare professional for testing of blood and to discuss the employee’s medical status. This includes an evaluation of any reported illness, as well as any recommended treatment.

31.11.04 Information Provided to the Healthcare Professional

To assist the healthcare professionals, the college will forward a number of documents to them, including the following:
1. A copy of the Bloodborne Pathogens Standard,

2. A description of the exposure incident,

3. The exposed employee’s relevant medical records (i.e., subject to completion of the Release of Information Authorization Form shown in Appendix 31.11.04A), and

4. Other pertinent information.

31.11.05 Healthcare Professionals Written Opinion

After the consultation, the healthcare professionals provide Walters State with a written opinion evaluating the exposed employee’s situation. The college, in turn, will furnish a copy of this opinion to the exposed employee.

In keeping with this process of emphasis on confidentiality, the written opinion will contain only the following information:

1. Whether Hepatitis B Vaccination is indicated for the employee,

2. Whether the employee has received the Hepatitis B Vaccination,

3. Confirmation that the employee has been informed of the results of the evaluation, and

4. Confirmation that the employee has been told about any medical conditions resulting from the exposure incident which require further evaluation or treatment.

All other findings or diagnoses will remain confidential and will not be included in the written report.

31.11.06 Medical Recordkeeping

To make sure that the college has as much medical information available to the participating healthcare professional as possible, Walters State maintains comprehensive medical records on employees. The College Nurse is responsible for setting up and maintaining these records, which include the following information:

1. Name of the employee,

2. Social Security number of the employee,
3. A copy of the employee’s Hepatitis B Vaccination status,
   a. Dates of any vaccination, and
   b. Medical records relative to the employee’s ability to receive vaccination,
4. Copies of the results of the examinations, medical testing and follow-up procedures which took place as a result of an employee’s exposure to bloodborne pathogens, and
5. A copy of the information provided to the consulting healthcare professional as a result of any exposure to bloodborne pathogens.

As with all information in these areas, the college recognizes that it is important to keep the information in these medical records confidential. The college will not disclose or report this information to anyone without the employee’s written consent (i.e., except as required by law). The records will be maintained for at least the duration of employment plus thirty years.

31.12. LABELS AND SIGNS

31.12.01 General

For employees the most obvious warning of possible exposure to bloodborne pathogens is biohazard labels (See Appendix 31.12.01.A). Because of this, a comprehensive biohazard warning labeling program has been implemented using color-coded labels, or when appropriate using red “color-coded” containers. The Assistant Vice President of Facilities Management is responsible for setting up and maintaining this program at Walters State.

The following items at Walters State have been labeled:

1. Containers of regulated waste,
2. Refrigerators/freezers containing blood or other potentially infectious materials,
3. Sharps disposal containers,
4. Other containers used to store, transport, or ship blood and other infectious materials,
5. Laundry bags and containers, and

6. Contaminated equipment.

On labels affixed to contaminated equipment, which portions of the equipment are contaminated, are also labeled.

The college recognizes that biohazard signs must be posted at entrances to HIV and HBV research laboratories and production facilities. However, the laboratories at Walters State perform only clinical work, which is not covered by these special signage requirements.

31.12.02 HIV and HBV Research Laboratories and Production

This provision is not considered to be applicable to this institution.

31.13. INFORMATION AND TRAINING

31.13.01 General

Having well informed and educated employees is extremely important when attempting to eliminate or minimize employee’s exposure to bloodborne pathogens. Because of this, all employees who have the potential for exposure to bloodborne pathogens are put through a comprehensive training program and furnished with as much information as possible on this issue.

This program was set up so that employees would receive the required training. Employees will be retrained at least annually to keep their knowledge current. Additionally, all new employees, as well as employees changing jobs or job functions, will be given any additional training their new position requires at the time of their new job assignment.

The College Nurse is responsible for seeing that all employees who have potential exposure to bloodborne pathogens receive this training. They will be assisted by the following instructors:

1. Nursing faculty,

2. Division supervisors,

3. Director of Human Resources, and

4. Emergency Services faculty.
31.13.02 Training Topics

The topics covered in the training program include, but are not limited to, the following:

1. The Bloodborne Pathogens Standard itself,

2. The epidemiology and symptoms of bloodborne diseases,

3. The modes of transmission of bloodborne pathogens,

4. Exposure Control Plan for Walters State Community College and where employees can obtain a copy,

5. Appropriate methods for recognizing tasks and other activities that may involve for exposure to blood and other potentially infectious materials,

6. A review of the use and limitations of methods that will prevent or reduce exposure, including:
   a. Engineering Controls,
   b. Work Practice Controls, and
   c. Personal protective equipment,

7. Selection and use of personal protective equipment include:
   a. Types available,
   b. Proper use,
   c. Location within the college,
   d. Removal,
   e. Handling,
   f. Decontamination, and
   g. Disposal,
8. Visual warnings of biohazard within the college, including labels, signs, and “color-coded” containers,

9. Information on the Hepatitis B Vaccine, including its:
   a. Efficacy,
   b. Safety,
   c. Method of administration,
   d. Benefits of vaccination, and
   e. The college’s free vaccination program,

10. Actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.

11. The procedures to follow if any exposure incident occurs, including incident report, and

12. Information on the post-exposure evaluation and follow-up, including medical consultation that the college will provide.

31.13.03 Training Methods

The college will use training presentations to make use of several training techniques including, but not limited to, those below:

1. Classroom type atmosphere with personal instruction,

2. Videotape programs,

3. Training manuals/employee handouts,

4. Employee review sessions, and


Because employees need an opportunity to ask questions and interact with their instructors, time is specifically allotted for these activities in each training session.
31.13.04 Recordkeeping

To facilitate the training of employees, as well as to document the training process, the college maintains training records containing the following information:

1. Dates of all training sessions,
2. Contents/summary of the training sessions,
3. Names and qualifications of the instructors, and
4. Names and job titles of employees attending the training sessions.

The forms shown in Appendices 31.13.04A-D have been used to facilitate this recordkeeping.

These training records are available for examination and copying to employees, as well as OSHA and its representatives.

31.13.05 Sharps Injury Log

In addition to OSHA’s 1904.8 Recording Criteria for Needlestick and Sharps Injuries, all precutaneous injuries from contaminated sharps are also recorded in the Sharps Injury Log.

All incidences must include at least:

1. date of injury,
2. the type and brand of the device involved,
3. the department or work area where the incident occurred, and
4. an explanation of how incident occurred.

This log is reviewed annually as part of the annual evaluation of the program and is maintained for at least five years following the end of the calendar year that they cover. If a copy is requested by anyone, it must have the personal identifiers removed from the report.

The form is shown in Appendix 31.13.04.E.
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