HEALTH
AND SAFETY MANUAL

University of North Alabama

PREFACE

The University of North Alabama is resolutely committed to providing a safe and healthful environment for its employees, students, and visitors. This Health and Safety Manual emphasizes that commitment by communicating important safety and health matters to all individuals. It does not substitute for safety and health codes and standards but rather explains the purpose of these materials and states the procedures and practices in readily comprehended format and language.

As with any policy or procedure manual, this Manual obviously requires constant updating; therefore, it will be reviewed and updated on a perpetual basis. This document as written, except as prohibited by law or regulation, nevertheless serves as the official Health and Safety Manual for the University of North Alabama.

UNA HEALTH & SAFETY MANUAL
Table of Contents

PROGRAM MANAGEMENT

Program Statement

It is the intent of the University of North Alabama:

To provide for employee safety, to assure safe operation of university facilities, and to comply with applicable health and safety regulations.

To provide employees with a safe place to work, free from recognized hazards that are likely to cause death, serious injury, or illness.

To develop, operate, and maintain the university facilities in a manner calculated to protect the health and safety of the public, prevent damage to property, minimize adverse effects upon the environment, and preserve effective community relations, regarding health and safety matters.

To adhere to generally recognized and accepted standards of performance in the areas of health and safety.

To ensure the provision of appropriate safety equipment.

To ensure training of employees who may work with toxic or hazardous materials.

Goals

The Occupational Health and Safety Program of the University of North Alabama has the following goals:

Reduce the risk of exposure to hazardous materials, physical and biological agents, and stressful conditions to the lowest level practically attainable.

Provide safe, healthful, comfortable and stress controlled working conditions.

Minimize the potential for exposure to hazardous energy sources.

Protect the environment.

Objectives

Objectives defined to meet the program goals:

Detect and anticipate the presence of workplace hazards by periodical hazard analysis.

Determine the magnitude of workplace risks by the use of proper evaluation techniques, and compare to accepted standards to determine acceptable levels of risk.

Control risks when the level of risk detected is unacceptable. The primary options for risk control will be engineering control and/or safe work practices. A secondary alternative is the use of personal protection.

Minimize hazardous waste generation and dispose of these wastes in an environmentally safe manner.

Responsibilities

President of the University

Establish the program statement for health and safety.

Designate institutional responsibility for the Occupational Health and Safety Program and promote effective administration of the program.

Review the University Occupational Health and Safety Program and guidelines proposed by the University Safety Committee, propose necessary and appropriate changes, and recommend to the Board of Trustees the program for approval when it warrants such approval.

Communicate responsibility so that Vice Presidents, Deans, Department Chairs, Laboratory Directors, Faculty, Supervisors, and other personnel know what performance is expected from them in relation to health and safety.

Through the chain of administrative responsibility holds Vice Presidents, Deans, Department Heads, Faculty, Supervisors and other personnel accountable for meeting their responsibilities for safety and health.

University Safety and Emergency Preparedness Committee

The Safety and Emergency Preparedness Committee is composed of:

The Vice President for Student Affairs and University Counsel and the Campus Safety Officer, as co-chairpersons; the Vice President for Academic Affairs and Provost; the Vice President for Fiscal Affairs: the Vice President for University Advancement and

Administration; Deans of the Colleges of Arts and Sciences, Business, Education, and Nursing and Allied Health; the Director of the O&M Plant; the Director of Student Life; the Director of Procurement; the Director of University Relations; the Director of University Health Services; the Director of Housing and Residence Life; the Director of Human Resources and Affirmative Action; the Director of Public Safety; Chairs of the Departments of Biology and Chemistry and Industrial Hygiene; the Coordinator of Telecommunications; the Director of Food Services; and two faculty members elected by the Faculty Senate.

It is the responsibility of the Safety and Emergency Preparedness Committee to:

Submit guidelines on safety and health for the approval of the President.

Propose and update institutional guidelines to meet federal and state regulations and other consensus standards.

Review institutional safety, health, and chemical hygiene procedures and recommend improved practices.

Review safety aspects in campus renovation and expansion projects.

Investigate reportable accidents as defined by federal regulations.

Safety Officer

Propose guidelines on health and safety for approval of the Safety Committee.

Advise and assist the Safety Committee and personnel on safety and health matters.

Conduct periodic activities required by the University Occupational Health and Safety Program.

Analyze accident records and investigate reportable accidents.

Assist in or coordinate the selection, fitting, and proper use of protective equipment.

Coordinate fit tests and training in the correct use, inspection, maintenance, and storage, of protective equipment.

At the request of the Vice President for Fiscal and Administrative Affairs and/or his/her designee, review projects and work orders concerning safety and health.

Advise the Vice President for Fiscal and Administrative Affairs and/or his/her designee, on the evaluation of contractor health and safety qualifications and health and safety performance.

Conduct or coordinate safety training for University personnel.

Coordinate the development of employee safety training programs.

Inform other employers engaged in services to the University of North Alabama about safety requirements.

Help establish and maintain emergency plans.

Supervisors

A supervisor may be a vice president, dean, department chair, faculty, administrator, or any other faculty or staff person who is in charge of one or more employees at a University facility. It is the responsibility of supervisors to:

Enforce safety policies and procedures established by the University Occupational Health and Safety Program.

Analyze potential hazards and institute specific and appropriate safety procedures and practices.

Inform personnel of the hazards involved in the conduction of their tasks and the necessary safety practices that must be followed.

When needed, contact the Safety Officer for assistance on hazard analysis, safety training, or selection ~~and~~ of personal protective equipment.

Employees and Students

Conduct their work in accordance with established safety and health procedures and avoid unnecessary risk taking behavior.

Wear personal protective equipment as prescribed by appropriate University personnel.

Report unsafe conditions and practices to their supervisors and instructors.

Communicate suggestions to improve safety and chemical hygiene to the appropriate University personnel.

Avoid behavior which may endanger themselves or others.

Report injuries and near misses to appropriate University personnel as soon as they occur.

Worksite Analysis

Activities with similar risks

Activities conducted at the University of North Alabama with possible common safety and/or occupational health concerns can be broadly classified into the following classes:

Laboratory and research activities.

Library, offices, and classroom activities.

Physical plant and maintenance work activities.

Operating University fleet vehicles.

Environmental compliance.

See Appendix A of this chapter for the list of possible safety regulations that apply to each of these activities.

General safety procedures and guidelines for these activities can be found in the **University Occupational Health and Safety Manual.**

Supervisors will develop specific safety procedures and guidelines to address the particular hazards involved in the activities conducted under their supervision.

*Procedures given in the University **Occupational Health and Safety Manual** can be used as a model.*

The University Safety Officer can assist in the development of specific plans.

Specific methods must take into consideration those hazards detected in a preliminary evaluation or analysis.

On-site Work Hazard Analysis Guidelines.

On-site work hazard analysis involves the following actions:

Conduct comprehensive baseline worksite surveys and periodic comprehensive update surveys.

Analyze hazards of new processes, materials, and equipment.

Analyze hazards of habitual jobs.

Conduct regular health and safety inspections to detect new or previously missed hazards.

Promote and encourage all personnel to notify supervisors of conditions that appear hazardous for appropriate follow-up.

Provide for investigation of accidents and near-miss incidents, so their causes and means for their prevention are identified.

Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.

Program Activities

Recording and reporting occupational injuries and illnesses

A log and summary of all reportable occupational injuries and illnesses will be maintained by the Director of Human Resources and Affirmative Action according to 29 CFR 1904. A summary of all entries during the previous calendar year will be prepared and completed by February 1 and transmitted to the University Safety Officer. This information will be used to determine and adopt specific corrective actions.

Inspections

Inspections to detect safety and health hazards will be conducted periodically. The frequency of these inspections will be based on the nature of the operation and requirements established in the University **Health and Safety Manual**, but in no case shall there be less than one comprehensive inspection every three years. These comprehensive safety inspections will be conducted or coordinated by the University Safety Officer.

Safety Evaluations

All operations that may expose personnel to chemical, physical, or biological agents above the established occupational limits, will be evaluated.

For those agents with established action levels, a medical surveillance program shall be established whenever personal exposures exceed this level.

Whenever personal occupational exposures exceed guidelines such as the American Conference of Governmental Industrial Hygienists Threshold Limit Values (ACGIH-TLV) or the Occupational Safety and Health Permissible Exposure Limits (OSHA-PEL) (whichever is lower), hazard control shall be implemented.

Performance of engineering controls and any other protective devices shall be evaluated periodically to assure proper performance.

Control

Supervisors in consultation with the University Safety Officer will determine the most suitable means of control for the hazards detected during inspections and evaluations.

The primary option for hazard control is engineering control and safe work practices. If these methods are not feasible, or they do not provide the desired level of protection, then personal protection will be considered.

When designing engineering controls, performance parameters shall be quantitatively defined. These parameters shall be evaluated upon completion of the project and henceforth, to assure that the required level of protection is maintained.

Training

Training will be conducted to meet requirements of content, frequency, and proficiency as defined in the **University Occupational Health and Safety Manual**.

Additional training will be provided every time that a deviation from acceptable standard procedures is observed, or when the cause of accidents and incidents shows a trend that can be attributed to poor performance in work practices.

Accident-Incident Investigation

Investigation of all accidents and incidents will be conducted by the safety officer with the help of area supervisors. The investigation will be documented in a written report describing accident characteristics, type of injuries, mechanisms of failure and corrective actions. A deliberate effort shall be made to understand fully the cause of every accident/incident so that these events are not repeated and effective corrective actions are implemented.

Program Evaluation

The Safety and Health program will be evaluated annually. The following quantitative indicators will be used in this evaluation:

Incidence rate defined as the number of OSHA reportable injuries, illnesses, or lost workdays referred to a common exposure base of 100 full time workers.

Lost workdays, or the number of workdays (consecutive or not), beyond the day of injury or onset of illness, that an employee was away from work or limited to restricted work activity because of an occupational injury or illness.

Lost workday cases, or the number of cases that involve days away from work or days of restricted work activity, or both.

Number of air samples taken during the year exceeding the action level and/or the established occupational exposure guidelines.

Number of evaluated engineering control devices that do not meet acceptable performance standards.

Activities such as inspections, evaluations, training sessions, etc. performed during the year.

The implementation of the Safety and Health Program will be reviewed for success by:

- Monitoring timeline for implementing the programs
- Cost of the programs
- Assessment of the overall Program by means of a questionnaire

The questionnaire found in Appendix B will be administered to the Safety and Emergency Preparedness Committee, President, Vice-Presidents and Campus Safety Officer. The data will be collected, analyzed and disseminated by the Office of Research each fall semester. The criteria for the questionnaire will be a mean score of 3 and above.

The use of quantitative indicators, monitoring of the implementation timeline, cost, inspections, training sessions and the questionnaire will provided a multi level of assessments from which to compile data. The multi-assessment data will be used by the Safety and Emergency Preparedness Committee to determine if the manual and/or program should be revised and to what extent. The Committee's report will be forward to the President.

APPENDIX A

REGULATIONS THAT APPLY TO DIFFERENT ACTIVITIES AT THE UNIVERSITY OF NORTH ALABAMA

Regulations that apply to:

Laboratory and research activities

- Chemical Hygiene Plan
- Control of Hazardous Energy Sources
- Hazard Communication
- Hazardous Waste Disposal
- Means of Egress
- Occupational Exposure to Bloodborne Pathogens
- Personal Protective Equipment

Library, offices and classroom activities

- Hazard Communication
- Hazardous Waste Disposal
- Means of Egress
- Occupational Exposure to Bloodborne Pathogens
- Ergonomics

Physical plant and maintenance work activities

- Control of Hazardous Energy Sources
- Hazard Communication
- Hazardous Waste Disposal
- Means of Egress
- Occupational Exposure to Bloodborne Pathogens
- Permit Required Confined Spaces
- Personal Protective Equipment
- Walking and Working Surfaces
- Contractor Safety Management

Operating University fleet vehicles

- Driver inspection of vehicle
- Use of emergency safety equipment
- Defensive driving

Environmental compliance

- Hazard Communication
- Hazardous Waste Disposal

Appendix B

University of North Alabama
Health and Safety
Program Evaluation

In an effort to continuously improve the overall effectiveness of the University of North Alabama Health and Safety Manual, the following evaluation shall be conducted on an annual basis. Each of the following questions has a score ranging from poor to excellent. Additional space is provided for comments or suggestions. Comments or suggestions are appreciated and will be used for the continuous improvement of the Health and Safety Program.

1. The Health and Safety Manual provides adequate information that reduces the risk of exposure to hazardous material, physical and biological agents and stressful conditions to the lowest level practically attainable.

Poor ___ Average___ Good___ Above Average___ Excellent___

2. The Health and Safety Manual provides adequate information to improve the overall safety, health and comfort of the campus community.

Poor ___ Average___ Good___ Above Average___ Excellent___

3. The Health and Safety Manual provides adequate information to implement and improve processes that protect the environment.

Poor ___ Average___ Good___ Above Average___ Excellent___

4. The Health and Safety Manual provides adequate information to educate the campus community about fire safety and its importance.

Poor ___ Average___ Good___ Above Average___ Excellent___

5. The Health and Safety Manual provides adequate information to educate the campus community about emergency preparedness and its importance.

Poor ___ Average___ Good___ Above Average___ Excellent___

Comments:
_____
_____
_____

EMERGENCY PREPAREDNESS PLAN

Program Statement

The University of North Alabama provides a learning environment that may be subject to major disruptions as a result of occurrences beyond the control of the institution. All members of the University community should exercise good judgment in responding to these events as the situation necessitates. The institution will try to provide emergency and limited services during periods of disruptions. The President or his or her designee shall make the determination to close the entire institution, suspend or postpone classes, curtail activities, or make the University available for community support.

Each department shall be responsible for the distribution of emergency information and the development of emergency procedures consistent with the responsibilities in its areas.

Objective

This plan is intended to provide quick and easy information to those involved in responding to a campus emergency. If conditions permit, all available information will be provided to the President of the University for a determination of the need to implement this plan. In the event of a crisis where an immediate response is required, the plan will be implemented according to the steps described below.

Plan Implementation

The President of the University or, in his absence, the designated Vice President in order of succession listed below, will be in charge:

Vice President for Academic Affairs and Provost

Vice President for University Advancement and Administration

Vice President for Student Affairs and University Counsel

Vice President for Fiscal Affairs

The President will manage the university's response to the emergency/disaster and will make such decisions as necessary to minimize risk of injury to members of the campus community and minimize damage to, destruction of, or disruption to property or services. The President will work with the Director of Public Safety and other members of the Emergency Operations Team to ensure that the University responds to the emergency/disaster in an expedient, coordinated, and effective manner.
The President will make such contacts, as he/she believes appropriate with the members of the University's Board of Trustees to apprise them of the nature and extent of the emergency/disaster.

The Director of Public Safety or the ranking public safety officer on the scene is responsible for the overall operation and coordination of the Emergency Preparedness Plan under the direction of the President. The Director of Public Safety, or the designated alternate, in carrying out the Emergency Preparedness Plan, will have the authority to consider all measures to implement the plan and respond to the emergency/disaster. During times of emergency, general protocol may be ignored.

Emergency Notification Procedures

Following authorization received by the Director of Public Safety from either the President or his designee, the Director of Public Safety will ensure that all members of the Emergency Operations Team are notified.

Emergency Operations Center

The primary location of the Emergency Operations Center will be the Office of Public Safety (706 Waterloo Road). The secondary location will be the University Relations House (116 E. Irvine Avenue). These locations are designated assembly points for the Emergency Operations Team. The location and nature of the emergency/disaster may dictate a different location for the Emergency Operations Center. Public Safety will establish appropriate communication among the Emergency Operations Team.

Preparation of Emergency Declaration

The Director of Public Safety, in conjunction with the Director of University Relations, may prepare a "Declaration of University State of Emergency" for approval and issuance by the President.

Emergency Operations Team

The campus administrative personnel listed below will be contacted and will report to the Emergency Operations Center or to a designated area immediately.

Vice Presidents
Director of University Relations
Director of Housing and Residence Life
Director of Physical Plant
Director of Public Safety
Director of University Health Services
Director of Student Life
Campus Safety Officer
Others as designated

Emergency Operations Team Responsibilities

Director of Public Safety:

The Director of Public Safety will coordinate all emergency activities with other emergency response agencies.

Director of University Relations:

The Director of University Relations will be the direct liaison with the news media. News agencies will be provided news releases as appropriate. The Director of University Relations will issue all official statements and administrators will coordinate releases of information through him/her. The alternate spokesperson for the Director of University Relations will be the Director of Public Safety.

Director of Physical Plant:

The Director of Physical Plant will act as liaison officer with companies and districts supplying utilities and other emergency facilities needs and will be responsible for keeping the President advised of the developments relative to destruction, disruption, or restoration of facilities to effectively administer emergency procedures. The Director of Physical Plant will contact and coordinate services and assistance rendered by all public utility companies. He/she will provide for the transportation of persons on campus to safe areas as needed during evacuation.

Director of Housing and Residence Life:

The Director of Housing and Residence Life will coordinate housing arrangements to accommodate the University populace.

Director of University Health Services:

The Director of University Health Services will maintain staff and supplies in a readiness status to accommodate possible emergencies and will coordinate any needed efforts with local hospitals and clinics.

Director of Food Services:

The Director of Food Services is responsible for providing the nutritional needs to the university community. Emergency arrangements for procurement of food as necessary will be made through campus food services or through the Director of Purchasing. Efforts should be coordinated with the Director of Housing and Residence Life to determine total number of persons to be served and the locations.

Director of Purchasing:

The Director of Purchasing will be responsible for making any and all purchases necessary to meet the needs of the University during an emergency/disaster. To expedite the shipment and receipt of all supplies, the normal channels may be bypassed with the permission of the President. The Director of Purchasing should remain in close contact with university officials in the Emergency Operations Center to arrange for needed supplies.

Evacuation

Evacuation procedures (where applicable) should be followed as appropriate to each building. Persons evacuated should be directed to pre-determined shelters and/or suitable locations until further notice.

Clean-Up Operations

The Director of Physical Plant will be responsible for the removal of debris, downed wires, or other hazards caused by the emergency. This process shall begin as soon as feasible following release from the President to ensure overall safety within the university community. A report on the condition of the clean-up operations and damage assessment will be made to the President.

Maintenance of Emergency Preparedness Plan

The Safety Officer will maintain a master copy of the Emergency Preparedness Plan, distributing any revisions as required. The Safety and Emergency Preparedness Committee or its designated subcommittee is responsible for the continuous improvement of this plan. A review of the Emergency Preparedness Plan will be completed at least annually to insure all information is current. The Safety Officer through the Safety and Emergency Preparedness Committee shall initiate and submit to the President's Executive Council for approval any revisions. All department chairs will keep a current copy of the Emergency Preparedness Plan and Telephone Directory on file. This will include updated personnel rosters and other pertinent information and procedures. Building Coordinators should ensure that proper evacuation procedures are posted in appropriate locations as to assist persons when evacuating. The Director of Housing and Residence Life should ensure that all resident students are adequately informed as to evacuation procedures and designated shelters.

Emergency Procedures Pamphlet

Each floor of each building on campus should prominently display an Emergency Procedures Pamphlet. This pamphlet was developed as a training tool to be used by each University department to educate the faculty, staff and students on the proper procedures to follow if an emergency situation occurs. This pamphlet includes information on the following:

Reporting emergencies
General evacuation procedures
Civil disturbance or demonstrations
Explosion, aircraft crash or similar incident
Tornado
Earthquake
Medical and first aid
Chemical or radiation spill
Bomb threat
Fire
First aid instructions
Violent or criminal behavior
Utility Failure
Sexual assault
Building specific plans

Emergency Preparedness Personnel

The Safety and Emergency Preparedness committee will maintain a listing of designated emergency preparedness personnel for each building. This document will contain a listing of building coordinators and floor leaders for each building on campus. The Director of housing and residence life will provide an updated list of building coordinators and floor leaders for each of the dormitory buildings and student housing as they change. The Safety and Emergency Preparedness committee will select each building coordinator and floor leader for the remaining office buildings. The Safety officer will maintain the master list of building coordinators and floor leaders and will make changes as they occur.

Building Coordinators

Each building on campus will be assigned a building coordinator. The building coordinator is responsible for coordinating emergency procedure training for his/her designated building. This will include but is not limited to fire drills, building evacuation, electrical safety, evacuation routes and assembly areas. Training will be conducted at least annually. Each building coordinator is responsible for providing documentation of training along with any deficiencies that were noted to the Safety and Emergency Preparedness committee. Information collected from the building coordinators will be

evaluated by the Safety and Emergency Preparedness committee for continuous improvement strategies.

Floor Leaders

Each building on campus that houses more than one department or has multiple floors will be assigned a floor leader. The floor leader, as directed by the building coordinator, will be responsible for coordinating emergency procedure training for his/her floor. Each floor leader will be responsible for maintaining the emergency procedures pamphlet for his/her floor insuring that evacuation routes, egress routes, and fire escapes are maintained at all times. Training in office type buildings should be conducted at least annually. Training in dormitory buildings / student housing should be conducted at least every semester.

Appendix A

Emergency Response Telephone Directory

University Department	Responsible Person	Office Phone
Emergency Operations Control	President's Staff	4211
Communications	Director of Public Safety	4357
Engineering, Damage Survey, Sanitation, Demolition, and Physical Plant	Director of Physical Plant	4274
Housing Requirements	Director of Housing & Residence Life	4124
Feeding Requirements	Director of Food Services	5667
Medical and Health Requirements	Director of University Health Services	4328
Personnel Assistance	Director of Human Resources	4291
Public Information and Assistance	Director of University Relations	4225
Purchasing and Supply	Director of Purchasing	4206
Public Safety (Police, Safety, Fire & Radiological Controls)	Director of Public Safety	4357
Student Activities	VP, Student Affairs & University Counsel	4223
Transportation	Director of Physical Plant	4274

Appendix B

Information found in the Emergency Procedures Pamphlet

University Emergency Service

Public Safety	4357 (HELP)
FIRE	9-911
AMBULANCE	9-911

1. The quickest and easiest way to obtain professional help for fire or injury is to phone 9-911.

2. Law enforcement assistance should be summoned by calling the Department of Public Safety at 4357 (HELP).

3. When calling, stay calm and carefully explain the problem and location to the Department of Public Safety.

4. Notify the Building Coordinator. For additional Emergency Procedure information, speak with your Building Coordinator. A list of coordinators can be obtained from the Department of Public Safety.

KEEP CALM **KEEP OTHERS CALM**

Building Coordinator: _____ Telephone:_____

Location: _____

Alternate Building Coordinator: _____ Telephone:_____

Location: _____

General Evacuation Procedures

1. All building evacuations will occur when an alarm sounds continuously and/or upon notification by the Department of Public Safety or the Building Coordinator.

2. Be aware of all the marked exits from your area and building. Know the routes from your work area.

3. If necessary or directed to do so by the Department of Public Safety or the Building Coordinator, activate the building alarms. CAUTION: THE BUILDING ALARMS RING ONLY IN THE BUILDING - you must call the Department of Public Safety or the Building Coordinator.

4. When the building evacuation alarms are sounded or when told to leave by the Department of Public Safety or the Building Coordinator, walk quickly to the nearest marked exit and ask others to do the same.

5. ASSIST THE DISABLED IN EXITING THE BUILDING! Remember that elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE.

6. Once outside, move to a clear area away from the affected building. Keep streets and walkways clear for emergency vehicles and personnel.

7. If requested, assist the Department of Public Safety and/or the Building Coordinator.

8. An Emergency Operations Center (EOC) may be set up near the emergency site. Keep clear of the incident Emergency Operations Center (EOC) unless you have important information to report.

9. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety or the Building Coordinator.

10. Refer to the emergency procedures specific to your building that are attached to the back of this guide.

Civil Disturbance or Demonstrations

1. Most campus demonstrations will be peaceful and everyone should attempt to carry on business as normally as possible. Avoid provoking or obstructing the demonstrators.

2. Should a disturbance occur, call the University Department of Public Safety at extension 4357 (HELP). To avoid causing additional trouble, use a private office when making the call. The procedures outlined under number "3" below should also be considered.

3. A threatening disturbance should be reported immediately to the Department of Public Safety and the Building Coordinator. The following action should also be taken.

   a) Alert all individuals in the area of the situation.

   b) Lock all doors, secure all files, documents and equipment.

   c) If necessary, cease operations and evacuate.

   d) Contact the Department of Public Safety for further instructions.

4. The Department of Public Safety will assess the situation. Participants who refuse to disperse may be subject to prosecution if any municipal, federal, and/or state laws have been violated.

5. If a class lecture is disrupted, call the Department of Public Safety at extension 4357 (HELP).

Explosion, Aircraft Crash or Similar Incident

In the event a violent accident such as an explosion or aircraft crash occurs on campus that could render a building or area unsafe, take the following actions:

1. Immediately take cover under tables, desks and other such objects which will give protection against falling glass or debris.

2. After the effect of the explosion and/or fire have subsided, notify the Department of Public Safety at extension 4357 (HELP) and the Building Coordinator. Give your name and describe the location and nature of the emergency.

3. When you are told to leave by the Department of Public Safety or by the Building Coordinator, walk quickly to the nearest marked exit and alert others to do the same.

4. ASSIST THE DISABLED IN EXITING THE BUILDING! Remember that elevators are reserved for disabled persons' use. DO NOT USE ELEVATORS IN CASE OF FIRE.

5. Once outside, move to a clear area away from the affected building. Keep streets and walkways clear for emergency vehicles and personnel.

6. If requested, assist the Department of Public Safety and/or the Building Coordinator.

7. An Emergency Operations Center (EOC) may be set up near the emergency site. Keep clear of the Emergency Operations Center unless you have important information to report.

8. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety or the Building Coordinator.

9. Refer to the emergency procedures, specific to your building, that are attached to the back of this guide.

Tornado

1. During a tornado stay calm and quickly follow the steps outlined below.

2. If indoors, seek shelter in the lowest level of the building. Interior hallways or rooms are preferable. KEEP AWAY FROM WINDOWS.

3. If outdoors, take cover in the nearest ditch or depression, away from power lines, buildings, and trees. DO NOT STAY IN A CAR OR ATTEMPT TO OUTRUN THE TORNADO.

4. After the tornado has passed, evaluate the situation and if emergency help is necessary, contact the Department of Public Safety at extension 4357 (HELP) and the Building Coordinator. Be aware at all times of dangerous structural conditions around you.

5. Damaged facilities should be reported to the Department of Public Safety. NOTE: Gas leaks and power failure create special hazards. Please refer to the section on **UTILITY FAILURE**.

6. ASSIST THE DISABLED IN EVACUATING THE BUILDING. Remember that elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE.

7. Once outside, move to a clear area away from the affected buildings. Keep streets and walkways clear for emergency vehicles and personnel.

8. If requested, assist the Department of Public Safety and/or the Building coordinator.

9. Do not return to an evacuated building unless directed to do so by the Department of Public Safety or the Building Coordinator.

10. If necessary, the Emergency Operations Center (EOC) will be activated in the Conference Room of the Public Safety Building. If the Public Safety Building is damaged beyond use, the alternative is the University Relations House (Irvine and Seminary)

11. All emergency procedures will be directed through the EOC. Building Coordinators will be in contact with the EOC - communications will flow through the Building Coordinators.

12. Buildings will be equipped with emergency response kits which will include flashlights, radios, first aid supplies, etc.

13. STAY CLAM. All emergency response efforts will require clear thinking and cooperation from all members of the campus community.

14. Refer to the emergency procedures specific to your building that are attached to the back of this guide.

Earthquake

1. During an earthquake, remain calm and quickly follow the steps outlined below.

2. If indoors, seek refuge in a doorway or under a desk or table. Stay away from glass windows, shelves
and heavy equipment. IF INDOORS DURING AN EARTHQUAKE EXIT THE BUILDING ONLY AFTER THE SHAKING HAS STOPPED.

3. If outdoors, move quickly away from buildings, utility poles, and other structures. Caution: Always avoid power or utility lines as they may be energized.

4. If in an automobile, stop in the safest place available, preferably an open area away from power lines and trees. Stop as quickly as safety permits, but stay in the vehicle for the shelter it offers.

5. After the initial shock, evaluate the situation and, if emergency assistance is necessary, call the Department of Public Safety at extension 4357 (HELP) and the Building Coordinator. Protect yourself at all times and be prepared for after-shocks.

6. Damaged facilities should be reported to the Department of Public Safety and the Building Coordinator. Note: Gas leaks and power failure create special hazards. Please refer to the sections on **UTILITY FAILURE**.

7. ASSIST THE DISABLED IN EVACUATING THE BUILDING. Remember that elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE OR EARTHQUAKE.

8. Once outside, move to a clear area away from the affected building(s). Keep streets and walkways clear for emergency vehicles and personnel.

9. If requested, assist the Department of Public Safety and/or the Building Coordinator.

10. If necessary, the Emergency Operations Center (EOC) will be activated in the Conference Room of the Public Safety Building. If the Public Safety Building is damaged beyond use, the alternative is the University Relations House (Irvine and Seminary).

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13. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety or the Building Coordinator.

14. STAY CALM. All emergency response efforts will require clear thinking and cooperation from all member of the campus community.

15. Refer to the emergency procedures specific to your building that are attached to the back of this guide.

Medical and First Aid

1. If a serious injury or illness occurs on campus, immediately call 9-911. Give your name, describe the nature and severity of the medical problems and the campus location of the victim.

2. In case of minor injury or illness, provide first aid care. Use the first aid materials located in the building. Be sure to restock first aid supply kits as materials are used.

3. In case of serious injury or illness, Red Cross trained personnel should quickly perform the following steps:

   a) Keep victim still and comfortable. DO NOT MOVE VICTIM.

   b) Ask victim, "Are you okay?" and "What is wrong?" (Check for responsiveness.)

   c) Check breathing and give rescue breathing if necessary.

   d) Check circulation and control serious bleeding by direct pressure on the wound.

   e) Continue to assist the victim until ambulance arrives.

   f) Look for emergency medical I.D., question witnesses, and give all information to the paramedics and to the Department of Public Safety.

4. Every building should have a person trained in first aid and CPR.
   Only trained personnel (i.e. first aid, CPR) should provide first aid treatment. The following persons are trained in first aid and CPR in your building and/or area:

FIRST AID		CPR	
Name _____	Ext. _____	Name _____	Ext. _____
Name _____	Ext. _____	Name _____	Ext. _____

Chemical or Radiation Spill

1. Any spillage of a chemical or radioactive material is to be reported immediately to the Department of Public Safety at extension 4357 (HELP).

2. When reporting, be specific about the nature of the involved material and the location. The Department of Public Safety will contact the necessary specialized authorities and medical personnel, including the Campus Safety Officer.

3. The professor or supervisor should vacate the affected area at once and seal it off to prevent further contamination of others until the arrival of public safety personnel.

4. Anyone who may be contaminated by the spill is to avoid contact with others as much as possible, remain in the vicinity and give their names to the Department of Public Safety. Required first aid and clean up by specialized authorities should be started at once.

5. If necessary or if directed to do so by the Department of Public Safety or the Building Coordinator, activate the building alarm. CAUTION: THE BUILDING ALARMS RING ONLY IN THE BUILDING - you must call the Department of Public Safety or the Building Coordinator.

6. When you are told to leave by the Department of Public Safety or by the Building Coordinator, walk quickly to the nearest marked exit and alert others to do the same.

7. ASSIST THE DISABLED IN EVACUATING THE BUILDING. Remember that elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE.

8. Once outside, move to a clear area away from the affected building(s). Keep streets and walkways clear for emergency vehicles and personnel.

9. If requested, assist the Department of Public Safety and/or the Building coordinator.

10. An Emergency Operations Center (EOC) may be set up near the emergency site. Keep clear of the EOC unless you have important information to report.

11. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety, the Building Coordinator, or the Campus Safety Officer .

Note: If possible, all labs should have placards on the door listing all types of hazardous materials stored in the lab.

Bomb Threat

1. If you observe a suspicious object or potential bomb on campus, DO NOT HANDLE THE OBJECT! Clear the area and immediately call the Department of Public Safety at extension 4357 (HELP). Refer to Steps "6" through "11" below for further instruction.

2. Any person receiving a phone call that a bomb or other explosive device has been placed on campus is to ask the caller:
   a) When is the bomb going to explode?
   b) Where is the bomb located?
   c) What kind of bomb is it?
   d) What does it look like?
   e) Why did you place the bomb?

3. Keep talking to the caller a long as possible and record the following:
   a) Time of call
   b) Age and sex of caller
   c) Speech pattern, accent
   d) Background noise

4. Immediately notify the Department of Public Safety (ext. 4357 (HELP)) and supply them with the information outlined above.

5. The Department of Public Safety will conduct a detailed bomb search. Employees are requested to make a cursory inspection of their area for suspicious objects and to report the location to the Department of Public Safety. DO NOT TOUCH THE OBJECT!

6. If necessary or if directed to do so by the Department of Public Safety or the Building Coordinator, activate the building alarm. CAUTION: THE BUILDING ALARMS RING ONLY IN THE BUILDING - you must call the Department of Public Safety or the Building Coordinator.

7. When the building evacuation alarms are sounded or when told to leave by the Department of Public Safety or by the Building Coordinator, walk quickly to the nearest marked exit and alert others to do the same.

8. ASSIST THE DISABLED IN EXITING THE BUILDING! Remember that elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE.

9. Once outside, move to a clear area away from the affected building. Keep streets and walkways clear for emergency vehicles and personnel.

10. If requested, assist the Department of Public Safety and/or the Building Coordinator.

11. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety or the Building Coordinator.

Fire

1. Know the location of fire extinguishers in your area and know how to use them. Training and information is available through the Physical Plant Department at extension 4274.

2. On a minor fire that appears controllable IMMEDIATELY contact the Department of Public Safety and the Building Coordinator. Promptly direct the charge of the fire extinguisher toward the base of the flame.

3. If necessary or if directed to do so by the University Department of Public Safety or the Building Coordinator, activate the building alarm. CAUTION: THE BUILDING ALARMS RING ONLY IN THE BUILDING - you must call the Department of Public Safety or the Building Coordinator.

4. On large fires that do not appear controllable, IMMEDIATELY call 9-911and the Building Coordinator. Then, evacuate all affected rooms, closing all doors to confine the fire and reduce oxygen - DO NOT LOCK DOORS!

5. When the building evacuation alarm is sounded or when told to leave by the Department of Public Safety or by the Building Coordinator, walk quickly to the nearest marked exit and alert others to do the same.

6. ASSIST THE DISABLED IN EXITING THE BUILDING! DO NOT USE ELEVATORS IN CASE OF FIRE.

7. Once outside, move to a clear area away from the affected building. Keep streets and walkways clear for emergency vehicles and personnel.

8. If requested, assist the Department of Public Safety and/or the Building Coordinator.

9. An Emergency Operations Center (EOC) may be set up near the emergency site. Keep clear of the Emergency Operations Center unless you have important information to report.

10. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by the Department of Public Safety or the Building Coordinator.

11. Refer to the emergency procedures, specific to your building, that are attached to the back of this guide.

    NOTE: If you become trapped in a building during a fire and a window is available, place an article of clothing (shirt, coat, etc.) outside the window as a marker for emergency personnel. If there's no window, stay near the floor, where the air will be more breathable. Shout at regular intervals to alert emergency personnel of your location.

First Aid Instructions

In All Cases Notify Department of Public Safety at extension 4357 (HELP).

Mouth to Mouth Resuscitation
If you have been trained to do rescue breathing, proceed as trained.

Poisoning and Overdose
1. Determine what substance is involved and how taken.
2. Stay with victim and assist as necessary.
3. If choking, lower victim's head.
4. Collect remainder of substance.

Fainting, Unconsciousness and Shock
1. Have victim lie or sit down and rest.
2. Keep victim comfortable, not hot or cold.
3. Ask or look for emergency medical I.D.
4. Treat other injuries as necessary.

Burns, Thermal and Chemical
1. Remove all affected clothing.
2. Flood chemical burn with cool water.
3. Cover burn with dry bandage.
4. Keep victim quiet and comfortable.

Severe Bleeding and Wounds
1. Apply direct pressure on wound.
2. Use clean cloth or hand.
3. Elevate body part.
4. Add more cloth if blood soaks through.
5. Keep pressure on wound until 4357 (HELP) arrives.
6. Apply pressure to pressure points, if necessary.

Choking
1. Check victim's mouth and clear of foreign matter.
2. Use abdominal thrusts (only if victim is unconscious).

Heart Attack
1. Place victim lying down on back.
2. Give CPR as necessary.
3. Keep victim comfortable, not hot or cold.
4. Ask or look for emergency medical I.D.

Fractures and Sprains
1. Keep victim still.
2. Keep injured area immobile.

Hypovolemic Shock
1. Check victim’s airway, breathing and circulation.
2. Lay victim down on his /her back.
3. Raise the victim’s legs 8-12 inches.
4. Prevent body heat loss by wrapping blankets, coats, etc. around victim.

NOTE: Professional Medical Care should be sought after first aid is given for above conditions.

Violent or Criminal Behavior

1. Everyone is asked to assist in making the campus a safe place by being alert to suspicious situations or persons and by reporting them as outlined below.

2. If you are the victim or are involved in any on-campus violation of the law such as assault, robbery, theft, overt sexual behavior, etc.:
   Do Not Take Any Unnecessary Chances!

3. Notify the Department of Public Safety at extension 4357 (HELP) as soon as possible and supply them with the following information:
   a) Nature of incident
   b) Location of incident
   c) Description of person(s) involved
   d) Description of property involved

4. If you witness a criminal act or whenever you notice a person(s) acting suspiciously on campus, immediately notify the Department of Public Safety and give them the information outlined in number "3" above.

5. Assist the police when they arrive by supplying them with all additional information and ask others to do the same.

6. Should a sniper be firing a weapon on or near campus, you should take cover immediately using all available concealment. After the shooting stops and/or if possible, follow steps "3,4, and 5" above.

7. CONDUCT WHILE BEING HELD HOSTAGE

a) Under all circumstances, attempt to stay calm and be alert to situations that you can exploit to your advantage. Remember that the primary objective of your family and law enforcement officials will be to secure your safe return as quickly as possible.
b) Do not attempt to fight back or to struggle physically. No matter how "reasonable" your captors may appear on the surface, they cannot be trusted to behave normally and their actions may be unpredictable.
c) Comply with the instructions of your abductors as well as you can.
d) Do not discuss what action may be taken by your family, friends or employer.
e) Make a mental note of all movements including times in transit, direction, distances, speeds, landmarks along the way, special odors and sounds like transportation, bells, construction, etc.
f) Whenever possible, take note of the characteristics of your abductors, their habits, surroundings, speech mannerisms, and what contacts they make. Such information can be of great value in their ultimate apprehension.
g) Generally, you cannot expect to have a good opportunity to escape; any attempt to escape, however, should not be made unless it is indicated that your life is in imminent danger. Carefully calculate the best possible odds for success.
h) Avoid making provocative remarks to your abductors. As noted, they may be unstable individuals who react explosively and are likely to be violent and abusive.
i) Try to establish some kind of rapport with your captors.

Utility Failure

1. In the event of a major utility failure occurring during regular business hours, immediately notify Physical Plant at extension 4274.

2. If there is potential danger to the building occupants, or if the utility failure occurs after hours, weekends and holidays, notify the Department of Public Safety at extension 4357 (HELP).

3. ASSIST THE DISABLED IN EXITING THE BUILDING! Remember that the elevators are reserved for disabled persons' use only. DO NOT USE ELEVATORS IN CASE OF FIRE.

4. Once outside, move to a clear area away from the affected building. Keep the streets and walkways clear for emergency vehicles.

5. DO NOT RETURN TO AN EVACUATED BUILDING unless directed to do so by Department of Public Safety or the Building Coordinator.

ADDITIONAL INFORMATION AND PROCEDURES

Always observe steps "1" and "2" above whenever the following utility emergencies arise.

Electrical/Light Failure

At present not all buildings are equipped with an emergency light system that will provide enough illumination in corridors and stairs for safe exiting. It is, therefore, advisable for your department to have flashlights available.

Elevator Failure

If you are trapped in an elevator, use the call button in the elevator to alert someone in the building that you are trapped.

Plumbing Failure/Flooding

Cease using all electrical equipment. Notify Physical Plant at 4274 (during regular working hours). If necessary, vacate the area.

Serious Gas Leak

Cease all operations. DO NOT SWITCH ON LIGHTS or ANY ELECTRICAL EQUIPMENT - REMEMBER, electrical arcing can trigger an explosion! Notify the Department of Public Safety at extension 4357 (HELP) and Physical Plant at 4274 (during regular working hours). Vacate the area.

Steam Line Failure

Immediately notify Physical Plant at 4274 (during regular working hours). If necessary, vacate the area.

Ventilation Problem

If smoke or odors come from the ventilation system, immediately notify Physical Plant at 4274. If necessary, cease all operations and vacate the area.

Sexual Assault

Everyone can and should take precautions to prevent victimization. This includes increasing your knowledge of potentially dangerous situations, avoiding them when possible and be prepared to deal with them as they are recognized. Some suggestions for improving personal safety are:

At Home

* Make sure hallways, garages and grounds are lighted. Have key ready to open door.
* Leave a spare key with a friend rather than leaving it under the doormat or over the door.
* Lock windows and doors that are easily accessible. Pull shades or curtains after dark to not advertise that no one else is home.
* List only last name and initials on mailbox, door and phone book.
* Do not give out personal information or make appointments with strangers over the phone.
* Do not admit stranger to your home. If an unexpected person approaches your door, determine identification before opening the door.

At The Office

* Most office environments are unique. Each department, depending upon working habits, public commitments and style of operation, will differ. A safety system can be developed which will complement the particular environment in which you work. The Department of Public Safety at extension 4357 (HELP) can be contacted as a resource for information and assistance in the design of a personal protection program for your office.

In The Car

* Park in well-lighted areas.
* Walk back to car with key ready.
* Check back seat before getting in to make sure no one is hiding.
* Keep doors locked at all times.
* If the car breaks down, raise the hood, put on the emergency lights, and lock the doors. Wait for someone to stop and offer to call help; stay in your locked car and ask them to call the police or a tow service.
* Avoid hitchhiking and hitchhikers due to the obvious high risks involved.

If You Are The Victim Of A Sexual Assault

* Attempt to stay calm and remain alert. Look for situations which you can exploit to your advantage. Your primary objective should be to survive the assault, and if possible, avoid serious injury to yourself.
* If possible, try to get away as fast as you can. If necessary, fight back. If, however, you are immediately threatened, attempting to escape or fighting back initially may not be possible or advisable. In such a case, it may be necessary to go along or even cooperate until a safer opportunity for escape presents itself, but escape may not be possible until after the act. Remember, staying alive is your most important concern.
* Take notice of the characteristics of your assailant, his habits, surroundings, contacts, speech and mannerisms. This could enable you to deal with the assailant and perhaps talk your way out of a rape situation, or provide a means of escape. Also, this information is invaluable for the police in trying to apprehend the criminal.
* If you are on campus, notify the Department of Public Safety at extension 4357 (HELP) as soon as possible.
* Get medical attention immediately.

Referral Service

Education on rape prevention is available through various service organizations. Involvement in programs such as these, as well as in rape crisis centers and neighborhood watch programs, contributes to a larger group effort and represents a much stronger force in the prevention of a sexual assault. Community resources and public concern, combined with informed personal prevention efforts by men and women, will do much to reduce and control this crime.

To report a sexual assault contact the Department of Public Safety immediately at extension 4357 (HELP).

Guidelines For Establishing Building Specific Plans

1. The cover page of the Emergency Procedures Guide should be filled in, noting building and floor or area.

2. The "Reporting Emergencies" section and the "Medical and First Aid" section of the Emergency Procedures Guide should also be completed.

3. The building specific plan should be inserted on top of this page in every Emergency Procedures Guide in the building.

4. All building specific plans should be coordinated between the Department of Public Safety, Building Coordinator, Alternate Building Coordinator(s), and any Floor Coordinators.

5. The following information should be included in the building specific plan:
   a) Name of Building Coordinator and assistants, include phone numbers and room numbers.
   b) Floor plans.
   c) Designated emergency exit routes.
   d) Designated assembly areas.
   e) Locations of emergency supplies.
   f) Locations of fire extinguishers.
   g) Building specific details concerning emergency evacuation and procedures following emergencies.
   h) The date of implementation.
   i) Page numbers - total pages (example Page 1 of 6).

***** INSERT BUILDING SPECIFIC PLAN ON TOP OF THIS PAGE *****

FIRE SAFETY PLAN

Program Statement

The University of North Alabama will provide protection to all faculty, staff, students, and visitors from the dangers of fire.

The University of North Alabama fire safety plan involves a variety of measures aimed at preventing fires and ensuring the safety of faculty, staff, students and visitors. The University's departments of Housing and Residence Life, Physical Plant, Public Safety, and Student Life work cooperatively with the Florence City Fire Department to promote fire safety in every university building. This cooperative relationship and other measures, including building construction, training programs for faculty, staff, and students, and routine inspection of fire safety equipment have contributed to a safe environment for hundreds of thousands of students and employees.

Objectives

The objectives of this chapter are:

1. To safeguard all persons on University of North Alabama premises from death or injury in the event of a fire or associated explosion.
2. To minimize the risk of fire and to limit the spread of fire.
3. To minimize the potential for fire to disrupt teaching and research, damage buildings and equipment and harm the environment.
4. That adequate means of escape in case of fire exist for all persons on University of North Alabama premises.
5. That all means of escape are correctly maintained, kept free from obstruction and available for safe and effective use at all times.
6. That the means of escape have adequate emergency lighting (in case of fire), which will be maintained in efficient working order.
7. That adequate means of giving warning in case of fire exist and are maintained in efficient working order.
8. That adequate means for fighting fire are present and are maintained in efficient working order.
9. That appropriate instruction will be given to all persons on University of North Alabama premises on evacuation procedures.
10. That effective management procedures are in place to respond to and deal with the aftermath of a fire.
11. That appropriate fire training is given to designated staff who have an active role in the implementation of fire precautions.
12. That all premises owned or occupied by the University of North Alabama are subjected to a fire risk assessment and that where risks are identified action is taken to implement appropriate control measures.

13. That measures are taken to protect buildings, installations and equipment from fire that are commensurate with the risks and are appropriate to the value of teaching, research or commercial importance of those assets.

Building Construction and Alarm Systems

University buildings are constructed of noncombustible materials, primarily brick and concrete. Walls, hallways, ceilings and floors are made of concrete, concrete block or other noncombustible materials. The Towers residence halls are equipped with fire department standpipes and hoses. Each hall is equipped with a fire alarm system that includes manual pull stations, horns, strobe lights and smoke detectors. The alarm systems and fire extinguishers are routinely tested. Students are advised that initiating a false alarm is a violation of the Student Code of Conduct.

Prevention and Inspection Programs

The Safety and Emergency Preparedness Committee along with the Safety officer is responsible coordinating university wide safety programs. They coordinate the fire safety programs on campus and train Residence Life staff on fire safety policies and procedures, providing educational materials to students on a variety of safety issues. University policies prohibit fire hazards in rooms such as, candles, many electrical appliances, cooking devices and room heaters. At the start of each semester, students are oriented on fire alarms and evacuation procedures and each hall conducts a fire drill during the first two weeks of each semester. Fire safety inspections are made with the Florence Fire Marshall on a regular basis. Building Coordinators along with floor leaders make weekly inspections to insure egress routes are maintained and that fire safety issues are addressed in a timely manner.

Dormitory Fire Safety

Fire Safety is taken very seriously at UNA. It is customary that within the first two weeks of each semester, your hall will conduct a fire drill. Please comply fully with the building evacuation and re-entry procedures during these drills. Any time you hear a fire alarm, pick up your keys, pull your door shut, and leave the building immediately. Never use the elevator. Take the time to learn where the fire alarm pull stations and exit routes are from any room in your building (you won't always be in your own room when the alarm sounds or when you spot smoke or flames). If you encounter smoke or flames in the building, pull the nearest fire alarm pull station and leave the building immediately. Your floor leader or RA will provide you with specific information such as emergency assembly areas and egress routes.

Never tamper with fire safety equipment. In addition to the pull stations, alarm horns and lights, exit and emergency lights and fire extinguishers throughout the

building, every room is equipped with a smoke detector. Never attempt to disable or cover the room smoke detector. Never store trash, bicycles, furniture or other items in hallways or stairwells. These items could easily impede a safe exit from the building in the event of a fire. Never prop open stairwell doors. In the event of a fire, deadly smoke and fumes will be effectively stopped by a closed door and will provide much-needed time for occupants to safely exit the building.

No candles or open flame devices! If you have one for any reason, send it home immediately or ask your RA to store it for you until you can remove it to your home or until the end of the school year. Therefore, our rule is no candles, period. Also, no oil lamps, heaters, grills or other open flame devices.

Keep the "fire load" in your room and building to a minimum. It's not the building itself that burns most easily, but the flammable material with which we fill the building. Remove trash to the dumpster on a regular and frequent basis. The amount of wall decorations in your room should be limited to 25% of the wall surface. Never hang or attach anything to the ceiling (with the exception of the sticky "glow stars".

In the Event of Fire:

1. Know the location of fire extinguishers in your area and know how to use them.
2. On a minor fire that appears controllable IMMIDIATELY contact the Department of Public Safety and the Building Coordinator. Promptly direct the charge of the fire extinguisher toward the base of the flame.
3. If necessary or if directed to do so by the University Department of Public Safety or the Building Coordinator, activate the building alarm. Caution: The building alarms ring only in the building. You must call the Department of Public Safety or the Building Coordinator.
4. On large fires that do not appear controllable, immediately call 9-911 and the Building Coordinator. Then, evacuate all affected rooms, closing all doors to confine the fire and reduce oxygen. Do not lock doors.
5. When the building fire alarm is sounded or when told to leave by the Department of Public Safety or by the Building Coordinator, walk quickly to the nearest marked exit and alert others to do the same.
6. Assist the disabled in exiting the building. Do not use elevators in case of fire.
7. Once outside move to a clear area away from affected building. Keep streets and walkways clear for emergency vehicles and personnel.
8. If requested, assist the Department of Public Safety and/or the Building Coordinator.
9. An Emergency Operations Center may be set up near the emergency site. Keep clear of the Emergency Operations Center unless you have important information to report.
10. Do not return to an evacuated building unless directed to do so by the Department of Public Safety or the Building Coordinator.

11. Refer to the emergency procedures, specific to your building for additional information.

Rules For Fighting Fires

NEVER FIGHT A FIRE IF:

You don't know what is burning. If you don't know what is burning, you don't know what type of extinguisher to use. Even if you have an ABC extinguisher, there may be something in the fire, which is going to explode or produce highly toxic smoke. Chances are, you will know what's burning, or at least have a pretty good idea, but if you don't, let the fire department handle it.

The fire is spreading rapidly beyond the spot where it started. The time to use an extinguisher is in the incipient, or beginning, stages of a fire. If the fire is already spreading quickly, it is best to simple evacuate the building, closing doors and windows behind you as you leave.

Do Not Fight the Fire If:

You don't have adequate or appropriate equipment. If you don't have the correct type or large enough extinguisher, it is best not to try to fight the fire.

You might inhale toxic smoke. If the fire is producing large amounts of smoke that you would have to breathe in order to fight it, it is best not to try. Any sort of combustion will produce some amount of carbon monoxide, but when synthetic materials such as the nylon in carpeting or foam padding in a sofa burn, they can produce highly toxic gases such as hydrogen cyanide, acrolein, and ammonia in addition to carbon monoxide. These gases can be fatal in very small amounts.

Your instincts tell you not to. If you are uncomfortable with the situation for any reason, just let the fire department do their job.

The final rule is to always position yourself with an exit or means of escape at your back before you attempt to use an extinguisher to put out a fire. In case the extinguisher malfunctions, or something unexpected happens, you need to be able to get out quickly, and you don't want to become trapped. Just remember, always keep an exit at your back.

Fire Drills

Fire Drills (sometimes known as emergency evacuation drills) are conducted on a periodic basis in all University facilities. The purpose of these drills is to insure an orderly and controlled building evacuation through practice, to determine the time required to complete a full building evacuation and to analyze the evacuation process in order to identify and address any problems.

Participation in these drills is mandatory. However, if special circumstances require your presence in the building during the drill, or if for physical reasons, you cannot comply with the evacuation requirements, the department head or Building Coordinator can notify the Department of Public Safety to make special arrangements.

Although this exercise may seem an inconvenience, The Safety and Emergency Preparedness Committee believes the process to be an important part of our emergency planning as well as providing for your well being during an actual fire emergency. Your cooperation and understanding are gratefully appreciated.

Fire Drill Procedures

When the building alarm sounds, your responsibilities are:

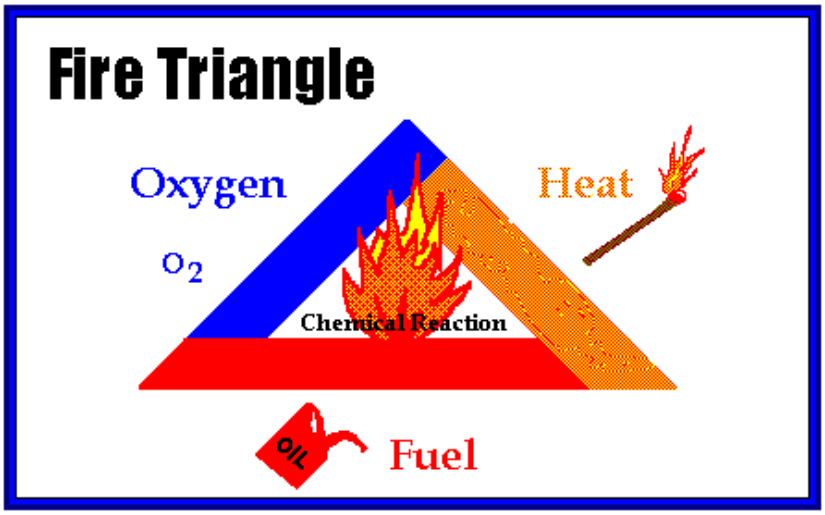
1. Shutdown any experiments, procedures, etc. that should not be left unattended. Extinguish any open flames and shut off any noxious or flammable gas supply valves.
2. Secure any valuables. Purses and wallets should be taken with you when you leave. Close your office or lab door.
3. Leave the building via the nearest available exit as soon as possible. **DO NOT ATTEMPT TO USE THE ELEVATORS**, they will not work while the alarm is active.
4. Stand well clear of the building by at least 50 feet in the area designated by the Building Coordinator.
5. DO NOT reenter the building until advised by Public Safety Officers.

Frequency of Drills

Fire drills shall be conducted in accordance with the following frequencies:

1. Residence Halls - a minimum of one (1) drill per semester.
2. University School - a minimum of ten (10) drills per academic year, of which two (2) must by accomplished during the first month of each new academic year.
3. All other facilities having fire alarm systems - a minimum of one (1) fire drill per calendar year.

A fire alarm that is activated due either to a planned event, an accident, malfunction, malicious act or actual fire or smoke and results in the building being evacuated is classified as a fire drill for the purpose of meeting the required frequency.



The Fire Triangle

In order to understand how fire extinguishers work, you first need to know a little bit about fire.

Four things must be present at the same time in order to produce fire:

- Enough **oxygen** to sustain combustion,
- Enough **heat** to raise the material to its ignition temperature,
- Some sort of **fuel** or combustible material, and
- The **chemical, exothermic reaction** that is fire.

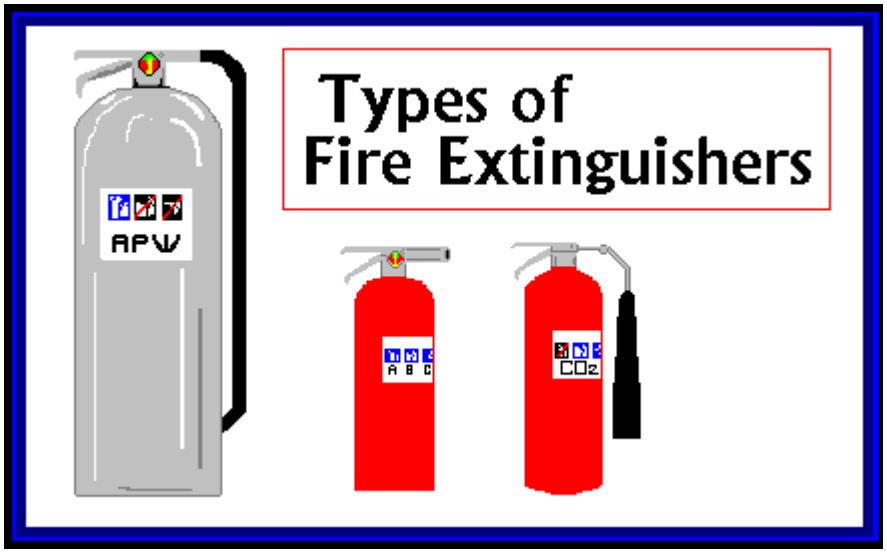
Oxygen, heat, and fuel are frequently referred to as the "fire triangle." Add in the fourth element, the chemical reaction, and you actually have a fire "tetrahedron." The important thing to remember is: **take any of these four things away, and you will not have a fire** or **the fire will be extinguished**.
Essentially, fire extinguishers put out fire by taking away one or more elements of the fire triangle/tetrahedron.
Fire safety, at its most basic, is based upon the principle of keeping fuel sources and ignition sources separate.

Not all fuels are the same, and if you use the wrong type of fire extinguisher on the wrong type of fuel, you can, in fact, make matters worse. It is therefore very important to understand the four different classifications of fuel.

Class A - Wood, paper, cloth, trash, plastics
Solid combustible materials that are not metals.

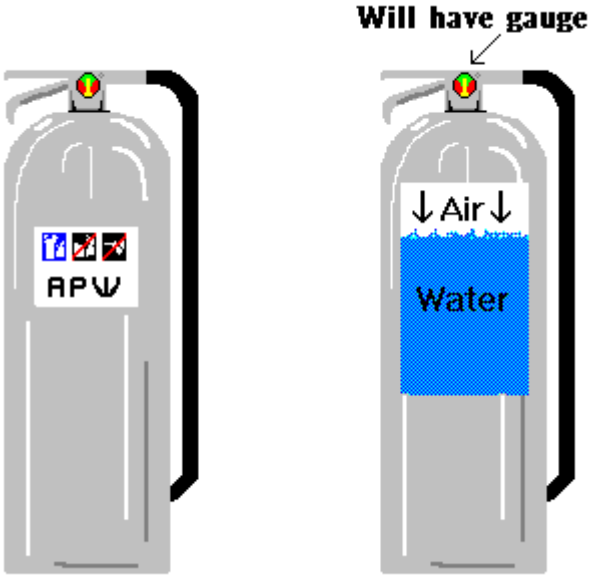
Class B - Flammable liquids: gasoline, oil, grease, acetone
Any non-metal in a liquid state, on fire.
Class C - Electrical: energized electrical equipment
As long as it's "plugged in," it would be considered a class C fire.

Class D - Metals: potassium, sodium, aluminum, magnesium
Unless you work in a laboratory or in an industry that uses these materials, it is unlikely you'll have to deal with a Class D fire. It takes special extinguishing agents (Metal-X, foam) to fight such a fire.
Most fire extinguishers will have a pictograph label telling you which fuels the extinguisher is designed to fight. For example, a simple water extinguisher might have a label like the one below, indicating that it should only be used on Class A fuels.



Different types of fire extinguishers are designed to fight different classes of fire. The three most common types of fire extinguishers are:

Water (APW)
Carbon Dioxide (CO2)
Dry Chemical (ABC,BC,DC)



Air-Pressurized Water Extinguisher

APW stands for "air-pressurized water." APWs are large, silver extinguishers which are filled about two-thirds of the way with ordinary tap water, then pressurized with normal air. In essence, an APW is just a giant squirt gun.

APWs stand about 2 feet tall and weigh approximately 25 pounds when full.

Water (APW) Extinguishers

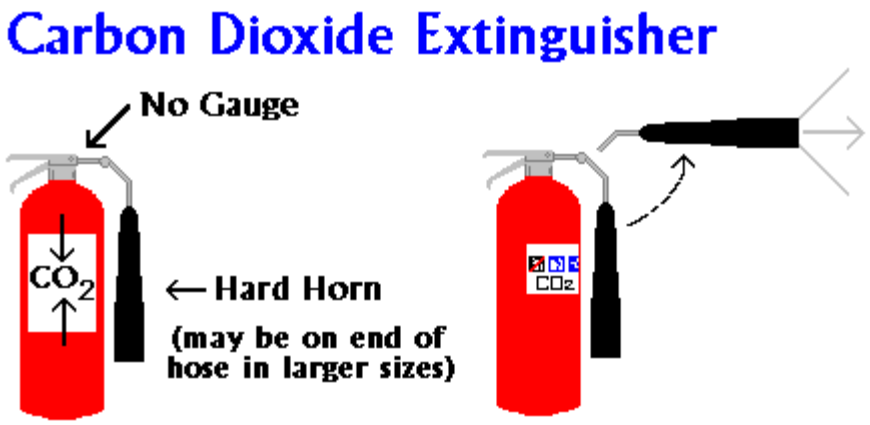
APWs are designed for Class A (wood, paper, cloth) fires only.

Never use water to extinguish flammable liquid fires. Water is extremely ineffective at extinguishing this type of fire, and you may, in fact, spread the fire if you try to use water on it.

Never use water to extinguish an electrical fire. Water is a good conductor, and there is some concern for electrocution if you were to use water to extinguish an electrical fire. Electrical equipment must be unplugged and/or de-energized before using a water extinguisher on it.

APWs extinguish fire by taking away the "heat" element of the fire triangle.

APWs will be found in older buildings, particularly in public hallways, as well as in Residence Halls. They will also be found in computer laboratories. It is important to remember, however, that computer equipment must be disconnected from its electrical source before using a water extinguisher on it.



Carbon Dioxide Extinguishers

Carbon Dioxide extinguishers are filled with non-flammable carbon dioxide gas under extreme pressure. You can recognize a CO2 extinguisher by its hard horn and lack of pressure gauge. The pressure in the cylinder is so great that when you use one of these extinguishers, bits of dry ice may shoot out the horn.

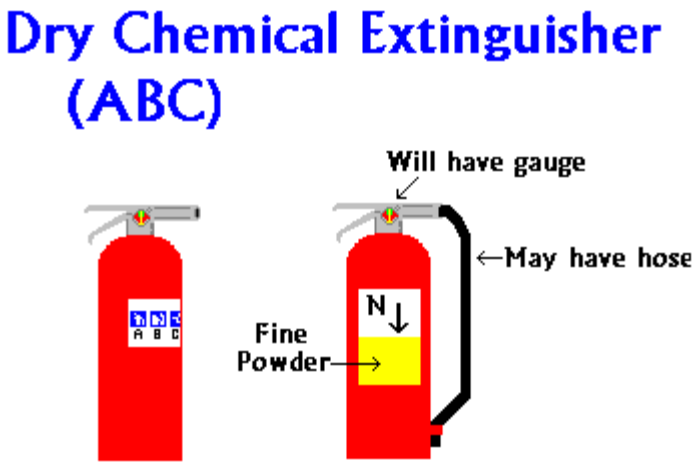
CO2 cylinders are red and range in size from 5 lbs to 100 lbs or larger. In the larger sizes, the hard horn will be located on the end of a long, flexible hose.

CO2s are designed for Class B and C
(flammable liquid and electrical) fires only.

Carbon Dioxide is a non-flammable gas that extinguishes fire by displacing oxygen, or taking away the oxygen element of the fire triangle. The carbon dioxide is also very cold as it comes out of the extinguisher, so it cools the fuel as well. **CO2s may be ineffective at extinguishing Class A fires** because they may not be able to displace enough oxygen to successfully put the fire out. Class A materials may also smolder and re-ignite.

CO2s will frequently be found in laboratories, mechanical rooms, kitchens, and flammable liquid storage areas.

All CO2 extinguishers at UNA undergo hydrostatic testing and recharge every six years.



Dry Chemical Extinguishers

Dry Chemical Extinguishers come in a variety of types. You may see them labeled:

- "**DC**" short for "dry chem"
- "**ABC**" indicating that they are designed to extinguish class A,B,and C fires, or
- "**BC**" indicating that they are designed to extinguish class B and C fires.

At UNA, "ABC" fire extinguishers are filled with a fine yellow powder. The greatest portion of this powder is composed of monoammonium phosphate. Nitrogen is used to pressurize the extinguishers.
ABC extinguishers are red and range in size from 5 lbs to 20 lbs on campus.

It is extremely important to identify
which types of dry chemical extinguishers are located in your area.
Read the labels and know their locations! You don't want to mistakenly use a "BC" extinguisher on a Class A fire, thinking that it was an "ABC" extinguisher.

An "ABC" extinguisher will have a label like this, indicating that it may be used on class A,B, and C fires.

Dry chemical extinguishers put out fire by coating the fuel with a thin layer of dust, separating the fuel from the oxygen in the air. The powder also works to interrupt the chemical reaction of fire, so **these extinguishers are extremely effective at putting out fire.**
These extinguishers will be found in a variety of locations. New buildings will have them located in public hallways. They may also be found in laboratories, mechanical rooms, break rooms, chemical storage areas, offices, university vehicles, etc.
Dry chemical extinguishers with powder designed for Class B and C fires may be located in places such as commercial kitchens or areas with flammable liquids.

It's easy to remember how to use a fire extinguisher if you can remember the acronym **PASS**, which stands for **P**ull **A**im, **S**queeze, and **S**weep.

Pull the pin.
This will allow you to discharge the extinguisher

Aim at the base of the fire.
If you aim at the flames (which is frequently the temptation), the extinguishing agent will fly right through and do no good. You want to hit the fuel.

Squeeze the top handle or lever.
This depresses a button that releases the pressurized extinguishing agent in the extinguisher**.**

Sweep from side to side
until the fire is completely out. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

MEANS OF EGRESS

Program Statement

The evacuation from any building of the University of North Alabama campus will be safe and expeditious in any foreseeable emergency.

Objectives

The objectives of this chapter are to ensure that:

- each building has sufficient, properly designed, and well-maintained, means of egress,
- each building has emergency evacuation plans, and
- building occupants are trained on emergency evacuation procedures.

Responsibilities for Evacuation Procedures

Public Safety

The Office of Public Safety will be responsible for:

communicating emergencies to affected personnel, university administration, and supporting organizations,

initiating proper response procedures, including evacuation,

enforcing site control procedures,

making available rescue services when needed,

providing support resources when available.

Building Coordinators and Department Chairs

Building Coordinators and Department Chairs will be responsible for:

identifying means of egress and verifying that their design and condition comply with state and federal codes,

creating and implementing specific emergency response plans for their buildings,

communicating these plans to employees who also will receive instruction on evacuation procedures,

conducting with the support of Public Safety and the University Safety Officer, emergency evacuation drills.

Safety Officer

The Safety Officer is available for assistance in accomplishing the objectives of this program, and will:

develop and publish institution-wide standards and guidelines for the design of means of egress and emergency response plans,

assist building coordinators and department chairs in all phases of the creation of specific emergency plans; and on request, in departmental training,

participate in emergency evacuation drills.

Employees

Employees will be responsible for:

knowing the means of egress of the building where they work,

following established procedures for the response to different types of emergencies and for the safe evacuation from buildings,

informing their supervisors of any hazardous or no-compliance condition of the means of egress,

participating in emergency evacuation drills.

General requirements

Means of egress from buildings of the UNA campus will comply with 29 CFR 1910.35-40 and National Fire Protection Association, NFPA-101, Life Safety Code.

Every building or structure designed for human occupancy located at the UNA campus will have a sufficient number of exits to permit the prompt escape of occupants in case of fire or any other emergency.

Life safety codes generally require at least two exits on each floor. These exits should be located as far as possible one from the other.

To a considerable extent, the number and width of exits are determined by building occupancy. In high hazard occupancy, no part of a building should be farther than 75 feet from an exit. From medium and low hazard occupancy, this distance may be increased to 100 and 150 feet respectively.

Building and structural materials used in the exits will not cause injury to the occupants of a building during emergency evacuations.

An exit may be protected by separation. The construction materials of the separating walls will meet the following requirements:

one-hour fire resistance rating when the exit connects three stories or less,
two-hour fire resistance rating when the exit connects four or more stories.

Exits will be arranged and maintained as to provide unobstructed egress from all parts of the building at all times.

Beside exit signs, direction signs indicating the exit route will be used when the exit path is not apparent.

Any doorway not constituting an exit way that can be mistaken as such, will have the following a warning sign:

"NOT AN EXIT"

All exits will have adequate and reliable sources of illumination.

Fire alarms will be provided in buildings where fire warnings of other type are not effective.

In addition, fire safety codes may require smoke alarms and automatic fire extinguishing systems.

Arrangement of exits

Any area where the blocking of a single means of egress may results in a trap will have an alternative way of exit travel.

Access to exits

When the room or working space is expected to be occupied with more than 50 persons, the doors accessing the means of egress will be side-hinged and swinging in the direction of exit travel.

The access door to the exit will have a minimum width of 28 inches.

Access to exits will be clearly recognizable.

Routes of exit access will never be toward a high hazard location, unless the path of travel is effectively shielded.

Exterior routes of exit access

Exterior means of access to an exit such as a balcony, porch, gallery, or the roof will be acceptable.

If exterior ways of exit access are considered, provisions will be taken to assure that walking surfaces are free of fall hazards (falling on and off the walkway).

Discharge from exits

All exits will discharge directly to the street, a courtyard, patio, or any other open space of size adequate to accommodate all persons leaving the building.

Each building in campus will have a designated area for collection, where occupants will remain after evacuation.

Headroom

Adequate headroom will be provided in all areas of exit travel.

The ceiling height shall be at least 7 feet and 6 inches. Any projection from the ceiling shall not reduce the free open vertical space to less than 6 feet and eight inches.

Exit markings

A sign with the word EXIT shall mark every exit. The size of the letters on this sign will be at least six inches high and three-fourth of an inch wide.

Signs will be illuminated by a reliable source of light with not less than 5-ft. candles measured on the illuminated surface.

Emergency Plans

General emergency procedures that apply institution-wide are available in the document entitled “University of North Alabama Emergency Procedures.” This document contains instructions on the following issues:

reporting emergencies;

general evacuation procedures;
civil disturbance or demonstrations;
explosion, aircraft crash or similar incident;
tornado;
earthquake;
medical and first aid;
chemical or radiation spill;
bomb threat;
fire;
first aid instructions;
violent or criminal behavior;
utility failure;
sexual assault;
building specific plans.

APPENDIX A
GLOSSARY OF TERMS

Means of egress

A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way. It consists of three separate and distinct parts: the way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel.

Exit access

Exit access is that portion of a means of egress that leads to an exit.

Exit

Exit is that portion of a means of egress that is separated from all other spaces of the building or structure by construction or equipment. It provides a protected way of travel to the exit discharge.

Exit discharge

Exit discharge is that portion of a means of egress between the termination of an exit and a public way.

Low hazard contents

Low hazard contents apply to materials of low combustibility so that no self-propagating fire can occur. Consequently, the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

High-hazard contents

High-hazard contents apply to materials that are liable to burn with extreme rapidity and generate poisonous fumes or explosions in case of fire.

Ordinary hazard contents

Ordinary hazard contents apply to materials that are liable to burn with moderate rapidity and generate a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in case of fire.

Emergency action plan

A plan describing procedures that ensure employee safety from fire or other emergencies.

LABORATORY SAFETY

Program Statement

Laboratories present unique hazards. Familiarity with laboratory operations and their associated hazards is fundamental in the search for effective ways of protection. All employees have the basic responsibility to plan and execute laboratory operations in a safe manner.

Risk Management

Laboratory supervisors are responsible for identifying hazardous chemicals.

For a definition of a hazardous chemical, see Appendix A of this chapter. For additional information, see the Hazard Communication Program of this manual.

Where hazardous chemicals are used in a laboratory, supervisors will develop and carried out the provisions of a chemical hygiene plan.

The chemical hygiene plan will be:

- designed to protect employees and students from health hazards associated with the chemicals used in each laboratory,

- capable of keeping the chemical exposures below the established occupational limits,

- available upon request to any interested party.

Responsibilities

Laboratory Supervisor

It is a responsibility of the laboratory supervisor to implement the laboratory safety program. The laboratory supervisor is required to:

develop with the assistant of the Safety Officer, the laboratory chemical hygiene plan.

Ensure the enforcement of the hygiene plan.

Prepare specific procedures for dealing with accidents and emergencies.

Select proper control methods.

Inform maintenance personnel and contractors the location of areas of storage and use of hazardous chemicals.

Prepare a safety plan for use of hazardous chemicals.

Provide safety orientation to new employees and students.

Ensure that employees receive the safety training required by the hazard communication program and the chemical hygiene plan.

The Safety Officer

It is the responsibility of the Safety Officer to monitor all aspects of safety and serve as primary source for health and safety information. The Safety Officer is required to:

assist the laboratory supervisor in identifying hazardous operations, designing safe practices, and selecting protective equipment.

Assist the laboratory supervisor in the development of the chemical hygiene plan.

Conduct annual laboratory inspections to ensure compliance with existing laboratory policies and government regulations.

Develop health and safety training plans and programs and conduct safety training courses.

Investigate accidents and report results to laboratory supervisors.

Assist in the disposal of hazardous wastes.

The Chemical Hygiene Plan

Contents

The objective of the chemical hygiene plan is to protect employees from the safety and health hazards of the substances used in a laboratory (OSHA 29 CFR 1910.1450).

The chemical hygiene plan must include the following items:

- √ standard operating procedures (SOPs) for laboratory activities that involve the use of hazardous chemicals
- √ a criteria for determining needs of implementation of control methods to reduce employee exposure to hazardous chemicals
- √ provisions to ensure that fume hoods and other protective equipment are working properly
- √ information on training procedures
- √ a list of laboratory operation that require special approval
- √ mechanisms for medical consultation and medical examinations
- √ a description of responsibilities under the plan
- √ methods for additional protection when working with particularly hazardous substances such as carcinogens, reproductive toxins, or substances of high acute toxicity.

Generic Plan

Appendix B of this chapter presents a generic plan developed following recommendations from the National Research Council (1), Stricoff and Walters (2), and Hearn et al (3). This plan can serve as general policy for laboratory operations and as reference for the creation of more specific procedures for each laboratory in campus.

References

1. National Research Council, Prudent Practices for Handling Hazardous Chemicals in Laboratories. National Academy Press, Washington, DC, 1981.
2. Stricoff R., Walters D. Laboratory Health and Safety Handbook. A Guide for the Preparation of a Chemical Hygiene Plan. John Wiley & Sons, 1991.
3. Hearn L., Goode S., Coble D. OSHA Laboratory Standard. Implementation Guide. Lewis Publishers, 1991.

APPENDIX A
GLOSSARY OF TERMS
(As per 29 CFR 1910.1450)

Hazardous chemical

A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Reproductive toxins

Chemicals that affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Select carcinogen

Any substance which meets one of the following criteria:
(i) it is regulated by OSHA as a carcinogen; or
(ii) it is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP)(latest edition); or
(iii) it is listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC)(latest edition); or
(iv) it is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidence in experimental animals.

Physical hazard

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

For a definition of a combustible liquid, compressed gas, explosive, flammable chemicals, organic peroxide, and oxidizer:

***See Appendix B of the Hazard Communication Program*.**

Unstable (reactive)

A chemical which in its the natural state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shock, pressure or temperature.

Water-reactive

A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Laboratory use of hazardous chemicals

The handling or use of such chemicals in which all of the following conditions are met:

- √ chemical handling is carried out at a "laboratory scale"
- √ multiple chemical procedures or chemicals are used
- √ the procedures involved are not part of a production process, or simulate in any way a production process
- √ "protective laboratory practices and equipment" are available to minimize the exposure to hazardous chemicals.

APPENDIX B
CHEMICAL HYGIENE PLAN

University of North Alabama

Department: _____

Laboratory: _____

CHEMICAL HYGIENE PLAN

Reference 29 CFR 1910.1450

Occupational Exposure to
Hazardous Chemicals in Laboratories

Implementation Date: _____

Laboratory Manager: _____

Chemical Hygiene Officer: _____

FOREWORD

The Chemical Hygiene Plan (CHP) is defined as a written program that establishes procedures, equipment, personal protective equipment and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in a particular laboratory.

The CHP must include standard operating procedures, criteria for implementation of control strategies, measures to ensure the proper operation of engineering controls, provisions for training and information dissemination, permitting requirements, arrangements for medical consultation, assignments of responsibilities, and identification of particularly hazardous substances.

This plan is the Chemical Hygiene Plan developed for (Department, laboratory):

_____

This CHP is maintained readily available to laboratory personnel at (location):

_____

It is required that all laboratory personnel know and follow the procedures outlined in this plan. All operations performed in the laboratory must be planned and executed in accordance with the enclosed procedures.

This CHP will be reviewed, evaluated and updated at least annually and is readily available to employees, their representatives and any representative of the Assistant Secretary of Labor for OSHA.

_____

Laboratory Supervisor

STANDARD OPERATING PROCEDURES

Chemical Procurement

Procurement of a chemical involves a commitment to handle and use the chemical properly from initial receipt to ultimate disposal.

Laboratory supervisors will review information on hazardous properties and proper handling, storage, and disposal practices before acquiring new chemicals. Purchase will be conditioned to laboratory accommodations, which should be adequate for the safe handling of these chemicals.

Chemical containers will not be accepted without accompanying labels, material safety data sheets, and proper packaging. All chemicals shipments should be dated when received and opened.

Chemical Storage

Received chemicals will be immediately moved to a designated storage area.

The storage area will be well illuminated, with all storage maintained below eye level. Large glass bottles will not be stored more than two feet from ground level.

Chemicals will be segregated by hazard classification and with the principle of avoiding incompatible chemical reactions.

See Appendix C for a guide to chemical compatibility.

Mineral acids should be separated from flammable and combustible materials.

Separation can be attained by distance or barriers.

Flammable materials will be stored in well-ventilated areas.

Acid-resistant trays will be placed under bottles of mineral acids.

Cyanides and sulfides will be prevented from contact with acids.

When possible, highly toxic chemicals whose containers have been opened will be stored in unbreakable secondary containers.

The storage area will not be used as a preparation or repackaging area.

When acids, bases, flammable, combustible, reactive and highly toxic materials contained in breakable containers are taken from the storage area, they will be placed in an outside container or bucket.

Chemicals at the lab bench or working area will be limited to a minimum necessary. Chemicals will not be exposed to sunlight or heat.

Stored chemicals will be inspected annually by the Chemical Hygiene Officer for container integrity, shelf life expiration dates, physical and chemical changes, and damage to the storage facility.

Periodic inspection of chemicals outside the storage area will identify those that need to be discarded or returned to the storage area.

Chemical handling

As a rule all exposures to chemicals will be considered hazardous and therefore shall be minimized.

Skin contact with all chemicals will be avoided.

Potential areas of skin exposure will be thoroughly cleaned before leaving the laboratory.

Mouth suction for pipeting or starting a siphon is prohibited.

Eating, drinking, smoking, gum chewing, or application of cosmetics is prohibited in laboratory areas.

Food or beverages will not be stored in laboratory or laboratory storage areas and shall not contact glassware used for laboratory activities.

Risk determinations will be conservative. Any mixture of chemicals will be considered to be as toxic as its most toxic component. Substances of unknown toxicity will be assumed toxic.

Laboratory personnel will be aware of the symptoms of overexposure to the chemicals they handle.

For more information about training requirements, see also the Hazard Communication Program of this manual.

Unprotected respiratory exposures at or above the OSHA's Permissible Exposure Limits and / or ACGIH's Threshold Limit Values are considered unacceptable. When airborne concentrations are suspected to exceed the occupational limits, they will be evaluated by standard air sampling methods.

Sampling services can be obtained from the Occupational and Environmental Health Laboratory.

Laboratory Equipment and Glassware

All laboratory equipment will be used only for its intended purpose.

All broken glassware will be immediately disposed of in a special broken glass container.

Evacuated glass containers will be shielded to contain chemicals and glass fragments in case of implosion.

All chemical container contents will be identified by proper labels.

Waste receptacles will be identified as such.

When inserting glass tubing into stoppers or corks and placing rubber tubing on glass hose connections:

√ use adequate hand protection
√ lubricate tubing
√ fire-polish ends of glass tubing
√ hold hands close together to limit movement of glass should a fracture occur

- √ when possible, substitute plastic or metal connections for glass to decrease the risk of injury
- √ when handling broken glass wear hand protection.

Use of Gas Cylinders

Valve damage due to overpressure or mechanical failure (as when a cylinder falls or drops) may result in catastrophic consequences. To avoid these accidents, cylinders will:

- √ be restrained in an upright position using non-combustible straps, chains or a suitable stand
- √ be stored in well-ventilated areas and protected against extreme weather conditions not reach temperatures higher than 125^0F:
  - sparks, flames, electrical circuits should never come in contact with any part of the cylinder
- √ not be stored in hallways.

Combustible and oxidizing gases will be stored in separated locations.

> *Separation can be achieved by distance (at least 20 feet apart) or barriers (five foot high, half-hour fire resistant wall).*

Only regulators approved for the specific gas at hand will be used. Oxygen-compatible threading compounds such as Teflon tape will be used when handling oxidizing gases.

Oil, grease, or other lubricants will not be used on valves or fittings.

When opening cylinder valves, the discharge direction will be away from the employees.

When cylinders are not in use, the valve will remain closed and pressure relieved, and the protective cap in place.

Cylinders will be moved with a help of a cart or hand truck. During transportation, the cylinder will be secured to the cart and with the cap in place.

Cylinders will not be lifted by the cap.

Wrenches will not be used on valves equipped with a handwheel.

If a cylinder develops a small valve leak, or a leak occurs in any safety device, it will be carefully removed out-of-doors or to an exhausted cabinet, away from any possible ignition source.

Use of Refrigerators

Workers are often tempted to store food items in laboratory refrigerators. This practice is not permitted. Food items are to be stored only in refrigerators maintained for this purpose.

Refrigerators used to store flammable materials must be designed for flammable storage, explosion proof and approved for Class 1, Division I locations as described in Article 501 of the National Electrical Safety Code (NFPA No. 70 and NFPA No. 45). These refrigerators should be labeled with the following legend:

√ "Acceptable for Storage of Flammable Materials."

Laboratory refrigerators should be:

√ placed against fire resistant walls
√ equipped with heavy-duty cords
√ protected by a separate circuit breaker.

Accumulation of vapors inside refrigerators will be prevented by:

√ Placing inside only close containers
√ Using vapor tight seals.

Use of Heating Devices

Electrical devices that supply heat for reactions and separations are common in laboratories. Improper use of these devices can result in electrical hazards, fire hazards, and burns.

Baths that need to be hot at the start of the shift should be equipped with timers.

Flammable and combustible solvents in heated baths will be maintained in fume hoods.

When handling hot fluids, wear personal protection.

Inspect the unit before use to assure that it has automatic shutoff to prevent overheating, is in good working condition, and has been maintained according to manufacturer recommendations.

Personal Protective Equipment

Safety glasses are required when working with chemicals. Contact lenses should be avoided when performing laboratory activities.

> *For additional information, see the chapter Personal Protective Equipment of this manual.*

Chemical goggles and / or full-face shield will be worn when there is a potential for splashes, projections or sudden release of pressure.

Sandals, perforated shoes, and bare foot are prohibited in the laboratory area.

Laboratory coats must be worn when working in the laboratory. Coats shall be removed if significant contamination occurs.

Gloves selection shall be based on chemical and physical resistance properties. Selected gloves shall be worn at all times when there may be a potential for chemical skin contact. Re-usable gloves shall be inspected prior usage. Damaged gloves shall be discarded. Gloves shall be washed prior removal from the hands.

Chemically resistant aprons and gloves shall be worn when there is a potential for chemical splashes and projections.

Thermal resistant gloves shall be worn when handling hot materials or conducting exothermic reactions.

If environmental conditions require the use of respirators, selection and use shall comply with the respiratory protection program.

Safe Work Practices

Procedures established in this plan must be known and followed.

Unsafe practices and conditions observed in the laboratory must be reported to the laboratory supervisor.

Avoid unnecessary exposure to chemicals by any route by using personal protective equipment and engineering controls.

Horseplay is forbidden.

Safety and health protection shall be considered when planning new projects.

Labeling

All containers, including chemical and waste containers, shall be labeled. The label shall identify contents, date of acquisition, and type of hazard.

Portable containers shall be identified by the person using the container.

Labeling is exempted when transferring material into a container for immediate use of the person who is performing the transference.

Housekeeping

Laboratory shall be maintained clean and free of residues.

Laboratory benches shall be kept clear of equipment and chemicals except those necessary for the work currently being performed.

All spills shall be cleaned and residues disposed of properly. Large releases and chemical spills which require special protective equipment and response procedures should be handled by a trained chemical emergency response team.

Aisles, exits, fire-extinguishing equipment, eyewash stations, emergency showers, electrical disconnects and other emergency equipment shall remain unobstructed.

All chemical wastes will be disposed of in accordance with the waste disposal plan.

CRITERIA FOR IMPLEMENTATION OF CONTROL MEASURES.

Air Sampling

Air samples will be obtained for regular or extended time operations that may generate air concentrations above the action level.

Sampling results will determine the need for additional sampling or the implementation of corrective measures (if PEL or TLV is exceeded).

Air sampling can be requested to the Occupational and Environmental Health Laboratory.

SAFETY EMERGENCY EQUIPMENT

Emergency telephone numbers shall be posted.

Portable Fire Extinguishers

Extinguishers will be selected with consideration for the hazards to be protected and the personnel who might use them.

For a guide to extinguisher selection see Appendix D of this chapter.

For the majority of laboratory applications, water and foam or aqueous film-forming foam (AFFF) units should have a capacity of 2.5 gal. Dry chemical and carbon dioxide units should hold 20-30 lbs.

Extinguishers should be located conspicuously and readily available in case of a fire.

The travel distance to an extinguisher from any location in the laboratory should be equal or less than 30 feet.

Preferably, extinguishers will be located close to any known hazard. The top of the extinguisher should not be higher than 5 feet above the floor.

Extinguishers will be inspected visually every month and records of the inspection retained in the laboratory facility.

The laboratory supervisor will also ensure that extinguishers are maintained annually and for those under pressure, tested at a frequency specified by the manufacturer.

All laboratory employees who will operate a fire extinguisher must receive annual training.

Prior acquiring new chemicals it will be verified that existing extinguishers and emergency equipment are appropriate for such chemicals.

Eyewash stations and safety showers

Any laboratory with a potential for chemical splashes will be equipped with eyewash stations and safety showers.

Eyewash station and emergency shower will be placed in close proximity to the hazard site. When possible, the ANSI recommendation of accessibility will be followed.

> Within 10 seconds or no further than 100 feet (ANSI Z358.1-1981).

Skin or eyes that have been exposed to harmful chemicals should be flushed with copious amount of water. To accomplish this requirement, eyewash stations and safety showers must deliver a continuous stream of water for at least 15 minutes.

Eyewash stations will be operated with a push-to-operate actuation valves that will remain open until manually closed.

Only potable water will be used in emergency stations, and the temperature of the water will be kept within a comfortable range ($60 – 95^0$F).

Where self-contained eyewash units are used, a program of frequent water replacement will be adopted.

All plumbed eyewashes and safety showers will be activated weekly to flush the lines and to permit observation of proper pressurization levels.

All employees shall be instructed in the location and use of emergency showers and eyewash stations.

ENGINEERING CONTROLS

Intent

When used and maintained properly, engineering controls will minimize personnel exposure to chemical and physical hazards.

Modification

No modification will be introduced in control devices (such as chemical hoods), unless it is shown that the level of protection afforded continues to be adequate.

Improper Function

Improper function of a control device shall be reported immediately. The device shall not be used before repair. A warning sign prohibiting the use of the malfunctioning device should be posted.

Usage of Local Exhaust Systems

External hoods should be positioned with the open face of as close as possible to the source of contamination.

Hood open face should be clear from any type of obstruction.

Local exhaust ventilation systems should be evaluated periodically to assure proper performance.

Usage of Laboratory Chemical Hoods. General

All operations that may generate hazardous airborne concentrations or unwanted releases of fluids or pressure will be conducted inside the hood.

As a rule, all laboratory operations that involve chemicals with a PEL or TLV of 100 ppm or less (gas or vapor), or 0.1 mg/m^3 or less (aerosol) will be conducted in a chemical hood.

The following additional recommendations must be considered when using fume hoods:

√ keep all equipment at least 6 inches back from the face of the hood. A stripe on the bench is a good remainder

√ do not use the hood as a waste disposal mechanism for volatile chemicals

√ store hazardous chemicals in safety cabinets, and not in chemical hoods

√ keep slots in hood baffle free of obstructions:

do not block slots with equipment used in the hood

√ minimize traffic past the front of the hood

√ do not remove any structural component of the hood

√ evaluate hood face velocity, hood annually and after any repair or modification to determine the overall system performance

The Occupational and Environmental Health laboratory can provide this evaluation

√ hoods shall have an average face velocity of 100± 20 feet per minute (fpm) with the sash in a fully open position

Sash stops should be installed when the face velocity requirement cannot be met with the sash in a full open position

√ individual velocity readings should be within 20% of the average face velocity to ensure uniform flow.

Usage of Laboratory Chemical Hoods.
Perchloric Acid Hoods

When handling perchloric acid:

- √ do not use perchloric acid in a hood designed for other purposes
- √ locate all utility controls outside the hood
- √ maintain the hood clean, avoid organic materials in this hood
- √ work surface will be watertight
- √ each hood will have an individual exhaust system, with an acid resistant fan or air ejector located outside the building. The fan will be lubricated with a fluorocarbon type of grease.

INFORMATION AND TRAINING

Hazard Information

All employees shall be informed of the hazards present in the laboratory. Each person shall receive the information prior assignment to a new activity in the laboratory.

All personnel shall be informed of the location and availability of the Chemical Hygiene Plan.

Training

Personnel shall be trained on the following subjects:

- √ the content of the OSHA Laboratory Standard (29 CFR 1910.1450) and its appendices
- √ exposure standards and guidelines
- √ signs and symptoms associated with exposure to the chemicals present in the laboratory
- √ location and availability of reference material on chemical hygiene.

APPROVAL OF SPECIAL ACTIVITIES

A permit shall be extended by the area supervisor for laboratory activities that present special foreseeable hazards. These activities include off-hours work, sole occupancy of building, hazardous operations and unattended operations.

For unattended operations, the following procedures will be followed:

review work procedures to ensure the safe completion of the operation.

Approve the operation in writing, describing any particular conditions under which the operation must be carried out.

Notify Public Safety of the on-going activities.

Leave the overhead lights in the laboratory on.

Take precautions in case of interruption of utility services.

MEDICAL CONSULTATION AND EXAMINATIONS

Medical consultation will be made available to employees under the following circumstances:

Whenever a person develops signs and symptoms that are related to the agents used in the workplace.

Whenever the average personal exposures exceed the action level for an OSHA specially regulated substance that requires medical surveillance.

Examples: lead, benzene, vinyl chloride, asbestos, methylene chloride and others.

Whenever an occupational injury may be related to a hazardous exposure occurred in the workplace.

The medical consultations and examinations shall be provided without cost, without loss of pay and at a reasonable time and place.

The examining physician shall provide a written report including following information:

any recommendations for further medical follow-up.

Results of the medical examination and diagnostic tests.

Any medical condition revealed in the course of the examination that can place the person at increased risk as a result of exposure to chemicals.

A statement that the employee has been informed by the physician of the results of the consultation or medical examination.

SPECIAL PRECAUTIONS

When working with allergens and embryotoxins

Wear chemically resistant gloves.

Conduct all work in hoods of confirmed satisfactory performance.

Store chemicals in adequately ventilated areas in unbreakable secondary containers.

Notify supervisor and safety officer in case of spills and accidental exposures.

When working with carcinogens

Special work areas may be designated for work with carcinogens. The areas may be as simple as a particular fume hood, or as complex as a laboratory of restricted access. In any case, the areas shall have appropriate warning signs and be of controlled access.

Rinse water and other wastewater shall be collected for proper disposal.

Extra precautions shall be taken to maintain good personal hygiene.

HEPA filters shall be used to protect vacuum lines and filters.

Chemical resistant gloves and long sleeves shall be used in the designated areas to prevent skin contact with the carcinogens.

Work with carcinogens should be conducted by using the smallest amount possible. Purchases should be restricted to a minimum necessary to permit uninterrupted work.

Working with Chemicals of Moderate Chronic or High Acute Toxicity

Use and store chemicals in areas of restricted access with special warning signs.

Use reliable hoods (minimum face velocity of 60 fpm) or other containment device for activities that that may result in the generation of aerosols or vapors.

Wear gloves and long sleeves. Wash hands immediately after working with these chemicals.

Assure that at least two people are present at all times when working with highly toxic chemicals.

Working with Chemicals of High Chronic Toxicity

Use these substances only in a designated or controlled areas.

Prepare a plan for the use and disposal of these chemicals.

Use ventilation systems with air cleaning devices (scrubbers, charcoal filters or HEPA filters).

Decontaminate equipment before removing it from the designated area.

Recordkeeping

Accident investigations will be conducted by the immediate supervisor with the assistance of the Safety Officer and other personnel as deemed necessary.

Exposure evaluations and medical records will be maintained for the duration of employment plus 30 years.

APPENDIX C
INCOMPATIBLE CHEMICALS

SOURCE: Prudent Practices for Handling Hazardous Chemicals in Laboratories, National Research Council, Washington, D.C., 1995.

CHEMICAL	INCOMPATIBILITY
Acetic acid	Chromic acid, nitric acid, hydroxyl compounds, ethylene glycol, perchloric acid, peroxides,permanganates
Acetylene	Chlorine, bromine, copper, fluorine, silver, mercury
Acetone	Concentrated nitric and sulfuric acid mixtures
Alkali and alkaline earth metals (lithium, sodium, potassium)	Water, carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide, halogens, powdered metals (e.g.,aluminum or magnesium)
Ammonia(anhydrous)	Mercury (e.g., in manometers), chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid (anhydrous)
Ammonium nitrate	Acids, powdered metals, flammable liquids,chlorates, nitrates, sulfur, finely divided organic or combustible materials
Aniline	Nitric acid, hydrogen peroxide
Arsenical materials	Any reducing agent
Azides	Acids
Bromine	See Chlorine
Calcium oxide	Water
Carbon (activated)	Calcium hypochlorite, all oxidizing agents
Carbon tetrachloride	Sodium, Chlorates, Ammonium salts, acids, powdered metals, sulfur,finely divided organic or combustible materials
Chromic acid and chromium	Acetic acid, naphthalene, camphor, glycerol, alcohol, flammable liquids in general
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine
Chlorine dioxide	Ammonia, methane, phosphine, hydrogen sulfide
Copper	Acetylene, hydrogen peroxide
Cumene hydroperoxide	Acids (organic or inorganic)
Cyanides	Acids
Flammable liquids	Ammonium nitrate, chromatic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Fluorine	Isolate from everything
Hydrocarbons (e.g.,butane,propane, benzene)	Fluorine, chlorine, bromine, chromic acid, sodium peroxide
Hydrocyanic acid	Nitric acid, alkali
Hydrofluoric acid (anhydrous)	Ammonia (aqueous or anhydrous)
Hydrogen peroxide	Copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, combustible materials
Hydrogen sulfide	Fuming nitric acid, oxidizing gases

Hypochlorites	Acids, activated carbon
Iodine	Acetylene, ammonia (aqueous or anhydrous), hydrogen
Mercury	Acetylene, fulminic acid, ammonia
Nitrates	Sulfuric acid
Nitric acid (concentrated)	Acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, copper, brass, any heavy metals
Nitroparaffins	Inorganic bases, amines
Oxalic acid	Silver, mercury
Oxygen	Oils, grease, hydrogen, flammable: liquids, solids, or gases
Perchloric acid	Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils
Peroxides, Organic	Acids (organic or mineral), avoid friction, store cold
Phosphorus (white)	Air, oxygen, alkalis, reducing agents
Phosphorus pentoxide	Water
Potassium	Carbon tetrachloride, carbon dioxide, water
Potassium chlorate	Sulfuric and other acids
Potassium perchlorate	(see Sulfuric and other acids also chlorates)
Potassium permanganate	Glycerol, ethylene glycol, benzaldehyde, sulfuric acid
Selenides	Reducing agents
Silver	Acetylene, oxalic acid, tartaric acid, ammonium compounds, fulminic acid
Sodium	Carbon tetrachloride, carbon dioxide, water
Sodium nitrate	Ammonium nitrate and other ammonium salts
Sodium peroxide	Ethyl or methyl alcohol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerin, ethylene glycol, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate (similar compounds of light metals, such as sodium, lithium)
Tellurides	Reducing agents

APPENDIX D

FIRE EXTINGUISHER SELECTION

Class of fires:

Class A
Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and some plastics.

Class B
Fires in flammable liquids, oils, greases, tars, oil-based paints, lacquers and flammable gases.

Class C
Fires that are engendered by energized electrical equipment.

Class D
Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.

Type of extinguishers:

Class A fires
Water, multipurpose dry chemical, foam or aqueous film-forming foam (AFFF).

Class B fires
Dry chemical, carbon dioxide, foam or AFFF.

Class C fires:
Dry chemical, carbon dioxide.

Class D fires:
Hazards should be protected with extinguishing agents that are approved for use on specific combustible metal (example: G-1© powder for magnesium fires, Lith-X for lithium fires).

HAZARD COMMUNICATION PROGRAM

Program Statement

To inform employees about work hazards and what they can do to avoid injury or illness.

UNA will provide information and training to minimize the possibility of accidental exposures to hazardous agents and to comply with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard.

Objectives

The objectives of this chapter are to ensure that:

All UNA employees are aware:

- of the existence of the Hazard Communication Program, and
- that the program is available to them.

Appropriate employees receive information and training so that they are:

- informed of the requirements of the OSHA Hazard Communication Standard,
- able to recognize potential hazards in their work area, and
- trained on methods of protection.

All chemical exposures are evaluated.

Material Safety Data Sheets (MSDSs) for chemicals used in each department are available to employees. These MSDSs are supply by manufacturers or can be obtained from the following addresses:

msds.pdc.cornell.edu/msdssrch.hazard.com/msds/
www1.fishersci.com/dhtml.jsp
www.msdsonline.com
physchem.ox.ac.uk/msds/
avogadro.chem.iastate.edu/msds/html

All chemicals used throughout the University are labeled in accordance with standard labeling procedures.

Before assignments, all persons involved in non-routine tasks are appraised of hazards associated with such tasks.

Contractors and their employees are informed of the hazards before performing work on University property.

Contractors inform UNA of any hazardous materials brought onto University property.

Exemptions

The Hazard Communication Program does not apply to:

any hazardous waste which is regulated under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act;

tobacco or tobacco products;

wood or wood products;

finished articles;

food, drugs, or cosmetics intended for personal consumption in the workplace;

any consumer products or hazardous substances as defined in the Consumer Product Safety Act, and when it is used for normal consumer use;

any drugs as defined in the Federal Food, Drug, and Cosmetic Act.

Responsibility for Hazard Communication

Safety Officer

The Safety Officer is available for assistance in accomplishing the above objectives, and will:

develop and publish institution-wide standards and guidelines for the hazard communication program.

Provide technical assistance to departments in the creation of specific programs and, on request, in departmental training.

Assist departments to obtain information not found on manufacturers' MSDSs.

Evaluate chemical exposures and recommend appropriate control procedures.

Department Chairs

The chair/administrator of each department that uses or stores hazardous material will be responsible for ensuring that:

appropriate elements of the Hazard Communication Program have been implemented in his/her department.

A current inventory of the department's hazardous materials is maintained.

Hazard communication training is provided to departmental employees and that such training is documented.

Hazards involved in non-routine operations are assessed before work begins, and proper control measures are instituted.

Contractors and maintenance personnel are informed of potential health and safety risks located within the department.

Employees and contractors wear necessary and proper personal protective equipment.

Employees

Employees who use hazardous chemicals in their work place will be responsible for:

attending hazard communication training sessions.

Asking questions when unsure about procedures, labels, warning signs and instructions.

Following safe procedures in the handling of chemicals.

Using adequate personal protective equipment.

Informing their supervisor of any known or suspected injuries or illnesses that might be associated with their exposure to hazardous chemicals used in the work place.

Labeling containers of hazardous materials in accordance with UNA labeling guidelines (see section on labels and other form of warnings or under "Program requirements").

Program requirements

Chemical inventory

A list of all hazardous chemicals used in a working unit must be maintained in location. The chemical name shall coincide with the name provided by the manufacturer or importer in the Material Safety Data Sheet (MSDS).

Contractor requirements

Contractors shall submit a list and/or the MSDSs of all the chemicals they plan to bring onto University property. Departments are responsible for removing when necessary, all hazardous chemicals that might expose contractor or maintenance employees during their work. If requested, a chemical list and/or MSDSs shall be made available to contractors prior to the beginning of any job. If available, protective measures to lessen the possibility of exposure should also be provided.

It is the responsibility of the employing department to notify contractors of their right to obtain this information.

Labels and other forms of warnings

Sound chemical labeling practices inform users about chemical hazards, facilitate emergency responses, and enable proper disposal of materials and containers.

All personnel using chemicals are responsible for ensuring that:

labels on incoming chemical containers are not defaced.

Labels that become unreadable are replaced with labels that clearly state the full name and a warning sign describing the primary hazards of the material.

New containers into which chemicals are transferred are appropriate for the material and are labeled as above, with name and warning. Note: temporary containers intended exclusively for immediate use by the employer who performs the transfer are exempted from labeling requirements.

Containers into which chemicals are transferred outside the immediate work area are labeled with the following information:

- full chemical name
- hazard warning

- concentration
- date prepared
- the initials of the person who prepared the solution.

Labeling is not required for transfer containers of immediate use.

The National Fire Protection Association (NFPA) 704M or DOT labeling systems will be used throughout the University for hazard warning.

For OSHA regulated substances, warnings shall be in accordance with the requirements of the specific standards (29 CFR 1910.1001-1048).

Material Safety Data Sheets

Material Safety Data Sheets (MSDSs) contain information about physical characteristics, health hazards, and emergency response procedures for hazardous substances.

Chemical manufacturers are required by law to provide MSDSs to customers.

The Safety Officer maintains a large file of MSDSs. However, each department should have a copy of a MSDS for each hazardous substance used or stored in the work area.

Supervisors shall ensure that MSDSs are in English and contain at least the following information:

identification of the ingredients that present a physical or health hazard.

Physical properties including boiling point, melting point, vapor pressure, vapor density, specific gravity.

Fire (flash point, flammable range, and ignition temperature), explosion, and reactivity hazards.

Health hazards including signs and symptoms of exposure.

Medical conditions that may be aggravated by exposure to a specific chemical.

Routes of entry to the human body.

OSHA's permissible exposure limits, ACGIH's threshold limit values, and any other recommended standard of exposure.

Carcinogenic potential as recognized by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA.

Precautions for safe handling, including hygiene practices and procedures for clean up of spills and leaks.

Control measures including engineering controls, work practices and personal protective equipment.

Emergency and first aid procedures.

Date of preparation and name, address and telephone number of the chemical manufacturer, importer, employer or any party responsible for the preparation of the MSDSs.

Training

Components

Hazard Communication training must include a review of:

physical and chemical hazards in the employee's work area.

The health effects posed by the chemicals used in the area.

Methods that may be used to evaluate the presence of chemicals and potential personal exposures.

Measures that employees can take to protect themselves from these hazards, including:

- proper work practices
- engineering controls such as substitution, containment, isolation, and local exhaust
- personal protective equipment.

Details of the written UNA Hazard Communication Program, including:

- an explanation of the labeling system
- an explanation and interpretation of MSDSs
- location of the information.

Frequency

Departments must ensure that employees receive training:

- initially, and immediately after contact,
- when changing jobs, and
- when new hazards are introduced into the workplace.

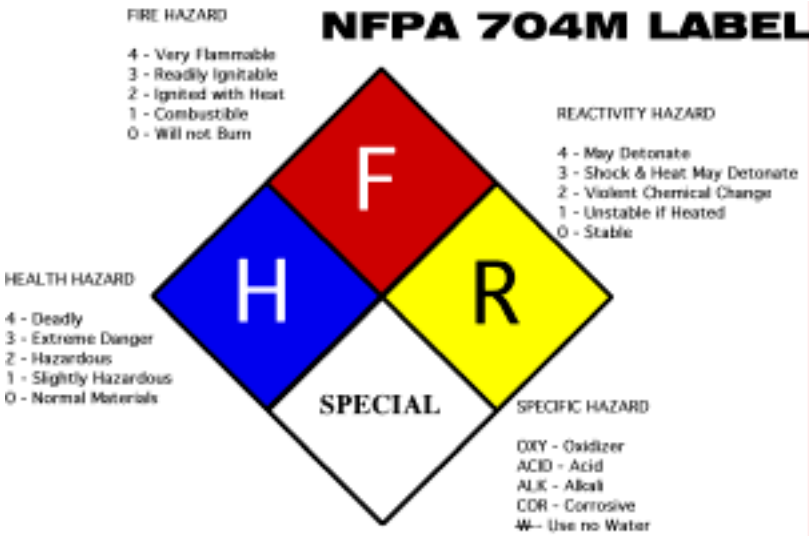
New employees should receive general hazard communication training during their initial orientation.

Departments must determine which employees require specific hazard communication training based upon employees' actual or potential exposure to hazardous chemicals.

The Safety Officer will provide specialized training upon request.

APPENDIX A

NATIONAL FIRE PROTECTION ASSOCIATION
704M LABELING SYSTEM



The Hazard Index:

4 = Severe Hazard
3 = Serious Hazard
2 = Moderate Hazard
1 = Slight Hazard
0 = Minimal Hazard

Rating Summary

Health (Blue)

4	**Danger**	May be fatal on short exposure. Specialized protective equipment required
3	**Warning**	Corrosive or toxic. Avoid skin contact or inhalation
2	**Warning**	May be harmful if inhaled or absorbed
1	**Caution**	May be irritating
0		No unusual hazard

Flammability (Red)

4	**Danger**	Flammable gas or extremely flammable liquid
3	**Warning**	Flammable liquid flash point below 100° F
2	**Caution**	Combustible liquid flash point of 100° to 200° F
1		Combustible if heated
0		Not combustible

Reactivity (Yellow)

4	**Danger**	Explosive material at room temperature
3	**Danger**	May be explosive if shocked, heated under confinement or mixed with water
2	**Warning**	Unstable or may react violently if mixed with water
1	**Caution**	May react if heated or mixed with water but not violently
0	**Stable**	Not reactive when mixed with water

Special Notice Key (White)

W	Water Reactive
Oxy	Oxidizing Agent

APPENDIX B

GLOSSARY OF TERMS

Absorption	A mode of entry into the body in which a substance enters through unbroken skin.
ACGIH	American Conference of Governmental Industrial Hygienists.
Action Level	Term used by OSHA to express the concentration of a material at which medical surveillance is required.
Adequate ventilation	Ventilation that will keep exposure to a material below the threshold limit value.
Ceiling	The concentration of a toxic chemical in the work area that should never be exceeded without protection.
Chemical name	It means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.
Combustible liquid	Any liquid having a flash point between 100 and 200°F.
Compressed gas	Any gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F; or 104 psi at 130 °F regardless of the pressure at 70°F; or a liquid having a vapor pressure exceeding 40 psi at 100°F as determined by ASTM D-323-72.
Explosive	A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.
Flammable Chemical	A chemical that falls into one of the following categories: 1.- Flammable aerosol is an aerosol that yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening. 2.- Flammable gas is a gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures

	with air wider than twelve (12) percent by volume, regardless of the lower limit. 3.- Flammable liquid is any liquid having a flash point below 100°F. 4.- Flammable solid is a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.
Flammable Range	A range of vapor concentration in air, usually expressed in percent by volume.
Flash point	Minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by the Tagliabue Closed Tester (American National Standard, Z11.24-1979); the Pensky-Martens Closed Tester (American National Standard, Z11.7-1979); or the Setaflash Closed Tester.
Hazardous chemical	Chemical that is a physical hazard or a health hazard.
Health hazard	Chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.
Immediate use	The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.
Organic peroxide	Organic compound that contains the bivalent -O-O-structure and which may be considered a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.
Oxidizer	A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical hazard	A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.
Pyrophoric	A chemical that will ignite spontaneously in air at a temperature of 130°F or below.
Unstable (reactive)	A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.
Water-reactive	A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

APPENDIX C
UNIVERSITY OF NORTH ALABAMA
CHEMICAL INVENTORY FORM

The hazard communication program involves apprising employees and contractors of the chemical hazards to which they may be exposed, and follow the written Hazard Communication Program in the UNA Health and Safety Manual. A chemical inventory of the work area is required.

_____ _____
Department Specific Work Area

Hazardous or Potentially Hazardous Substances used or stored in this Area

Hazardous Substance	Max. Quant.	Physical State [1]	Storage Container [2]	Concentration	CAS Number

[1] i.e., gas, liquid, solid [2] G = glass, P = plastic, M = metal, F = fiber

Material Safety Data Sheets for these materials are available.

Date:_____ Department Chair or Representative:_____

APPENDIX D
UNIVERSITY OF NORTH ALABAMA
HAZARD COMMUNICATION PROGRAM

Training Documentation

I have received and understand the material presented concerning the UNA Hazard Communication Program. The program followed the written HAZARD COMMUNICATION PROGRAM found in the Safety Manual, and was presented as an overview of the OSHA Hazard Communication Standard. I understand that it will be expanded by my supervisor to include my working exposures.

I understand how to interpret and use the labeling system and Material Safety Data Sheets (MSDSs) that are accessible to me. I agree to follow safe work practices presented to me in the training session I have just completed.

_____ _____
Date Building/Room #

_____ _____
Printed Name Social Security #

_____
Employee Signature

Notes:

The above named employee has been informed and instructed by _____ _____ on chemical hazard recognition, interpretation of chemical labels, use of MSDSs, safe work practices and the need for personal protective equipment.

Workplace Trainer: _____ Date: _____

Once completed maintain a copy of this form in the department.

HAZARDOUS WASTE DISPOSAL

Program Statement

Waste chemicals, out-of-date reagents, solvents, used oils, thinners, cleaning fluids and any other discarded materials classified as hazardous wastes will be promptly removed from Campus and disposed by methods that comply with Federal and State regulations.

Objectives

To ensure that all UNA faculty, supervisors and staff who generate hazardous wastes know:

- their responsibility in the identification, collection, storage and disposal of these wastes,
- the procedures for the disposal of hazardous wastes.

General procedures

For chemical wastes hold for disposal, the University will provide suitable containers and designated and well specified areas for storage.

When collecting wastes the mixing of different chemicals should be avoided, unless components have similar chemical properties or belong to the same chemical family. Flammable and combustible liquids shall be stored in well-ventilated areas and in compliance with standard fire protection methods.

Accumulation of hazardous wastes in campus facilities will be limited by periodic removal of these wastes.

All hazardous wastes will be packed in compatible groups and removed from campus by an EPA-approved contractor.

Labeling and transportation of hazardous wastes will comply with all applicable DOT regulations.

All hazardous wastes will be sent to an EPA-approved Treatment, Storage and Disposal (TSD) facility.

Identification

The responsibility for the identification of waste chemicals rests with the faculty, staff, and maintenance personnel who have generated the waste. All waste receptacles should be marked with labels that identify their contents. The label shall contain the following information:

the generic, common or trade name of all hazardous components;

the hazardous waste number;

this number may be obtained by the hazardous waste determination (see Appendix A of this section), or by consulting the hazardous waste disposal contractor;

total quantity of the waste (mass or volume);

the time period over which the waste was generated;

the identification of the generator;

if available, the approximate concentration of the hazardous components (optional).

The waste generator should try to ascertain the identification of unlabeled, mislabeled or unknown chemical wastes. It is encouraged to obtain as much information as possible before submitting samples for chemical analysis. Please keep in mind that the identification of unknown chemicals is very costly and can be easily avoided by proper management.

Waste Containers

Chemical wastes shall be stored in suitable, good condition containers (no leaking, bulging, or corroded units). The contents of each container shall be identified. An inventory of full containers of hazardous wastes must be maintained in the waste storage area.

Solid chemical wastes shall be stored in sturdy containers similar to those used for storage of the source materials. Liquid chemical wastes shall be placed in containers designed for that purpose. When using breakable containers for the collection of liquids, the chemical characteristics of the wastes shall be considered in the assessment for the need of secondary containment.

Under some conditions, sanitary wastes and non-hazardous, biodegradable wastes may be discharged into sanitary sewers without a permit. Subject to local regulations, modest quantities of common chemicals can be discharged into sanitary sewers if they have been properly treated to neutralize, deactivate or

stabilize the regulated chemical constituents. Federal law prohibits the disposal of any wastes containing untreated regulated chemicals into sanitary and storm sewers.

Suggestions to Limit Disposal Costs

Waste management starts at the time the chemical is ordered. Because some materials may become out of date, or out of specifications, they can create a disposal problem. The amount of the material ordered should be limited to that needed to complete the project at hand. Chemicals packaged in large containers can create unnecessary hazards and a disposal problem later in their life cycle.

Make sure you know procedures for disposal of chemical wastes before you initiate the project. Cost of the disposal of hazardous wastes shall be included in the regular project budgets.

Please remember that pouring chemicals into the sanitary sewer is dangerous and most probably illegal.

Hazardous Waste Determination

Before discarding any waste, it should be determined if it is a hazardous waste. In the event that you are dealing with a hazardous waste, you have two options:

treat it in house to make it non-hazardous;

make arrangements for its disposal to an EPA- permitted TSD facility.

For the identification of hazardous wastes, refer to Appendix A of this section.

Waste Generation Status

The waste generator status of an organization is determined by the amount of waste that this organization generates per month. General guidelines for "counting" hazardous waste includes the following provisions:

count wastes accumulated on site for any period between subsequent shipments;

count wastes returned to manufacturer;

count wastes placed directly in a regulated on-site treatment or disposal unit.

For a definition of generator categories and their respective responsibilities, refer to Appendix B of this section.

Transportation of Hazardous Wastes

All off-site shipments of hazardous wastes shall comply with EPA and DOT regulations. The applicable EPA and DOT regulations are found respectively in 40 Code of Federal Regulations Part 262 and 49 CFR Part 172.

For more information on transportation of hazardous waste requirements see Appendix C of this section.

The Hazardous Waste Manifest

Each off-site shipment of hazardous wastes must be accompanied with a hazardous waste manifest. The transporter and the TSD facility receiving the waste should be designated in the manifest. The manifest should also name an alternate TSD facility. The waste generator must use a manifest that is provided by the State that receives the waste.

The TSD facility should return a signed copy of the manifest to the generator within 35 days of the initial shipment. The generator should file an exception report with EPA if a properly signed copy of the manifest is not returned within 45 days.

APPENDIX A
HAZARDOUS WASTE DETERMINATION

It is the responsibility of each waste generator to identify and label all chemical wastes generated during the course of activities. If the generated wastes are hazardous, their disposition shall comply with EPA regulations.

The following is a general guide for the identification of a hazardous waste. For further assistance in the identification and the disposal of hazardous wastes, please contact the respective service provider hazardous waste contractor or the UNA Safety Officer.

Solid Waste

According to EPA, a hazardous waste is a solid waste that possesses hazardous properties. Essentially a solid waste is any material, not necessarily solid, that is no longer of value or use and that will be thrown away or recycled. Rules for the identification of solid wastes are given in 40 CFR 261.2 “Definition of a solid waste.”

A solid waste is any discarded material that is abandoned, recycled, or considered inherently waste-like.

Abandoned means disposed of, burned or incinerated, accumulated, stored or treated before being abandoned.

Recycled means used in a manner that constitutes disposal such as applied to, or placed on the land for disposal; used as a fuel for energy recovery; or reclaimed to recover a usable product.

Excluded from the solid waste category are: domestic sewage, industrial wastewater discharges (subjected to regulation under Section 402 of the Clean Water Act), special nuclear materials as defined by the Atomic Energy Act of 1954, materials subjected to in-situ mining techniques, and some materials used for recovery purposes.

Hazardous Waste Determination

Before discarding any solid waste, it should be determined if it is a hazardous waste. In the event you are dealing with a hazardous waste, you can treat it in house to make it non-hazardous, or make arrangements for its disposal by contracting the services of an EPA permitted Treatment, Storage and Disposal (TSD) facility.

A waste material is hazardous if it is listed (40 CFR Part 261.30-33), or possesses a hazardous characteristic (as defined in 40 CFR Part 261.20-24).

Listed Hazardous Wastes

"P" and "U" Listed Materials (40 CFR 261.33)

Solid wastes that have never been in a process may be either "P" or "U" listed hazardous wastes. A waste under either of these two categories needs to contain only one active ingredient from those included in either of the two lists.

The "P" and "U" lists contain commercial chemical products or manufacturing chemical intermediates, any off-specification products, any residues remaining in a container or in an inner liner, any residues in contaminated soil, water or other debris resulting from a cleanup spill.

Any chemical listed in the "P" and "U" lists is identified as an acute hazardous waste (AHW).

"F" Listed Hazardous Wastes
Hazardous Wastes from Non-Specific Sources (40 CFR 261.31)

The "F" list contains solvents, degreasers, and wastewater that are generated in various general processes.

"K" Listed Hazardous Wastes
Hazardous Wastes from Specific Sources

The "K" list contains wastes from highly specific sources within various industries. These industries include wood preservation, inorganic pigment production, pesticide production, etc.

A copy of "P", "U","F", and "K" listed wastes can be found under regulations in the EPA web site (www.EPA.gov.)

Characteristics of Hazardous Wastes (40 CFR 261.20-24)

When the solid waste is not listed, the generator must verify that it does not contain a hazardous characteristic (as defined in 40 CFR Subpart D). At this stage, process knowledge can be applied for hazard characterization if all the constituents of the waste are known, and the process does not contribute any additional hazardous components. More often, the generator will be required to perform chemical analysis that may include the determination of the following characteristics:

Ignitability
Corrosivity
Reactivity
Toxicity (Toxicity Characteristic Leaching Procedure, TCLP)

Characteristic of Ignitability (40 CFR 261.21)

A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

It is a liquid (other than an aqueous solution containing less than 24% of alcohol by volume), and has a flash point of less than 60°C (140°F).

It is not a liquid and is capable, under standard temperature and pressure, of causing a fire.

It is an ignitable compressed gas (as defined in 49 CFR 173.300).

It is an oxidizer (as defined in 49 CFR 173.151).

Characteristic of Corrosivity (40 CFR 261.22)

A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following properties:

It is aqueous and has a pH less than 2.0 or greater than 12.5.

It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.25 in.) per year.

Characteristic of Reactivity (40 CFR 261.23)

A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

It is normally unstable and readily undergoes violent changes without detonating.

It reacts violently or forms potentially explosive mixtures with water.

It generates toxic gases, vapors or fumes when mixed with water.

It is a cyanide or sulfide bearing waste.

It is capable of detonation or explosive decomposition at standard temperature and pressure, or when subjected to a strong initiating source, or when heated under confinement.

It is a forbidden explosive (49 CFR 173.51), a class A explosive (49 CFR 173.53) or a class B explosive (49 CFR 173.88).

Toxicity Characteristic (29 CFR 261.24)

A solid waste exhibits the characteristic of toxicity if by using the TCLP method, the extract from a representative sample of the waste has a concentration equal to or greater than that listed in Table I of the respective standard (29 CFR 261.24).

APPENDIX B
HAZARDOUS WASTE GENERATORS

EPA defines three categories of hazardous waste generators, each with very specific requirements. These categories are:

- Large Quantity Generators (LQG) (40 CFR 262.34(a))
- Small Quantity Generators (SQG) (40 CFR 262.34(d))
- Conditionally Exempt Small Quantity Generators (CESQG) (40 CFR 261.5)

Large Quantity Generators

LQGs generate more than 1000 kilograms of hazardous wastes per month. A LQG can accumulate an unlimited amount of hazardous wastes on site for up to 90 days (without extension).

Some of the LQGs requirements:

conduct hazardous waste determinations;
obtain an EPA I.D. number;
maintain records;
have container management plans;
have preparedness and prevention plans;
have contingency plans;
provide personnel training.

Small Quantity Generators

SQGs generate between 100 and more than 1000 kilograms of hazardous wastes per month. A SQG cannot accumulate more than 6,000 kilograms of hazardous wastes on site. The wastes cannot remain on site for more than 180 days (in some cases the storage time can be extended up to 270 days).

SQGs requirements:

conduct hazardous waste determinations;
obtain an EPA I.D. number;
maintain records (reduced requirement);
have container management plans;
have preparedness and prevention plans;
have contingency plans (reduced requirement);
personnel must have familiarity with hazardous waste operations.

Conditionally Exempt Small Quantity Generators

CESQGs generate less than 100 kilograms of hazardous wastes per month. A CESQG is subject to the rules of the SQG any time the accumulation of hazardous wastes exceeds the following limits:

1,000 kilograms of hazardous wastes.
1 kilogram of acutely hazardous wastes.
100 kilograms of acutely hazardous wastes from a spill clean-up.

CESQGs requirements:

conduct hazardous waste determinations.

APPENDIX C
TRANSPORTATION OF HAZARDOUS WASTES

Packaging and Labeling

The selection of proper packaging and labels is determined by the shipping name of the chemical (49 CFR 172.101). Labels must conform to DOT specifications as to durability, size, design and color.

Materials and wastes with subsidiary hazards must have a label for each hazard class that the materials exhibit.

Labeling requirements for shipping lab packs that are made up of many smaller containers inside a large container (consolidated packaging) are given in 49 CFR 172.402.

EPA and DOT require these words to appear on the containers:

> *HAZARDOUS WASTES—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.*

Generator's Name and Address
Manifest Document Number

The marking should also include the proper shipping name preceded by the word "WASTE." And the DOT ID Number.

OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

Program Statement

The University of North Alabama will take measures to prevent infections from pathogenic microorganisms present in blood and other human body fluids.

Objectives

The objectives of this chapter are to ensure that:

- all tasks with a potential for exposure to bloodborne pathogens are identified,
- protection to these pathogenic microorganisms is available through an exposure control plan,
- the disposal of biological wastes complies with Federal and State regulations, and
- Hepatitis B vaccination is offered to employees with tasks that may involve exposures to bloodborne pathogens.

Exposure Control Plan

Exposure Determination

The following UNA employees may be exposed to blood or other potentially infectious materials:

- Faculty of the College of Nursing and Allied Health
- Personnel of the University Health Services
- UNA employees who are certified in first aid and CPR.

The following UNA employees may be potentially exposed to blood or other potentially infectious materials:

- Custodians
- Faculty of the Kilby School.

Methods of compliance

General

Universal precautions will be adopted to prevent contact with blood or other potentially infectious materials.

All body fluids will be considered infectious materials.

See Appendix A of this chapter for a glossary of terms.

Controls

Engineering and work practice controls will be used to minimize employee exposure.

Examples of engineering controls include the use of sharps disposal containers, self-sheathing needles, sharps with injury protection, and needless systems.

If engineering and work practice controls are not feasible or do not provide an acceptable level of protection, personal protection will be considered.

Handwashing facilities will be readily accessible for all employees with a potential for exposure to human infectious materials.

Antiseptic hand cleaners or antiseptic towelettes can be used for cleaning hands when handwashing facilities are not readily available. This method however, will not substitute running water, which will be used as soon as feasible.

Hands will be washed immediately after removal of protective equipment.

Skin and membranes that contacted human infectious materials will be flushed immediately after contact.

Eating, drinking, smoking, applying lip balm, and handling contact lenses are prohibited in areas with human infectious materials.

Methods to minimize splashing, spraying, spattering, and generation of droplets of blood will be adopted during medical procedures.

Food will not be kept in refrigerators where blood and other biological samples are maintained.

The handling of contaminated needles and sharps

Contaminated needles and other sharps will not be bent, recapped, or removed.

When these actions are required by a specific medical procedure, the use of a mechanical device or a one-handed technique is recommended.

Contaminated reusable sharps will be placed in appropriate containers until decontaminated. The containers will be:

- puncture resistant
- labeled or color-coded
- leak-proof on the sides and bottom

Storage and shipping of blood specimens and biological wastes

Specimens of blood and infectious materials will be stored and transported in color-coded or labeled containers.

Puncture resistant, secondary containers will be used when leakage or puncture of the primary container is anticipated.

Personal Protective Equipment

Selection of protective equipment will be based on the extent of the hazard.

For example, regular janitorial activities in areas with no visible contamination of blood will require the use of impermeable gloves only.

Disposable gloves will not be washed or decontaminated for re-use.

When a potential for splash is present during clean up activities of spilled blood, in addition to gloves, eye and face protection will be needed.

Activities with more direct contact with blood such as medical procedures, first aid, and CPR will require gloves, gowns or laboratory coats, and goggles or glasses with solid side shields.

Face shields in combination with eye protection devices will be worn whenever it is anticipated the possibility of

splashes, spray, spatter, or droplets of blood or other infectious materials.

Garments that become soaked with blood will be removed immediately.

All personal protective equipment contaminated with blood will not be removed from the work area, and will be disinfected, washed or disposed.

Housekeeping

All equipment and working surfaces contaminated with blood and other potentially infectious materials will be cleaned and disinfected.

Contaminated work surfaces will be disinfected with an appropriate disinfectant:

- after completion of procedures
- immediately or soon after the surface became contaminated
- at the end of a work shift.

Broken glassware that may be contaminated with blood will not be picked by hand.

Wastes containing blood or other potentially infectious materials will be placed in closed containers that are leakage proof, labeled or color-coded. A double container will be used if leakage of the primary container is anticipated.

Disposal of regulated wastes

A contract has been established between the University of North Alabama and Mid-Waste Incorporated of Alabama for the removal and disposal of biological wastes from UNA campus.

Mid-Waste Incorporated provides containers and receptacles for the collection of sharps, needles and biological wastes and removes these wastes periodically from the University Infirmary.

Laundry

Blood contaminated laundry will be placed and transported in impermeable bags or containers labeled or color-coded.

Personal handling contaminated laundry will be notified of the hazard and instructed to wear gloves when handling the contaminated laundry.

Hepatitis B vaccination

The hepatitis B vaccine is available to UNA's employees who may be exposed to blood and other potentially infectious materials.

Those employees who decline to accept this vaccine will sign the statement presented in Appendix B of this section.

Exposure incident

Following a report of an exposure incident, medical evaluation and follow up will be made available to the exposed employee. This evaluation will include at least the following elements:

- Identification of route of exposure
- Identification of the source of exposure

If the source of exposure is an identified person (source individual), his or her blood will be tested for HIV, HBV, or both (only if consent from the source individual is obtained).

If the source of exposure is known to be positive or unknown, blood from the exposed employee will be tested for HIV, HBV, or both (only if consent is obtained).

Counseling will be made available in case of an infection.

Notification of an incident

Employees will notify their supervisors of the occurrence of an exposure incident.

Supervisors will contact University Health Services immediately after receiving the notice of the incident. They must provide the following information:

- a description of the incident including task conducted at the moment of the exposure
- route(s) of exposure involved

- type of protective equipment used at the moment of the incident.

A copy of the healthcare professional's report will be provided to the exposed employee within 15 days of the completion of the evaluation.

Information and training

Employees who may be exposed to blood-borne pathogens will received training at the time of initial assignment and at least annually thereafter.

A training program will be implemented with the collaboration of the College of Nursing and Allied Sciences, University Health Services and the University Safety Officer.

APPENDIX A
GLOSSARY OF TERMS
TAKEN FROM 29 CFR 1910.130

Bloodborne Pathogens

Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated

The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Laundry

Laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharps

Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination

The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Exposure Incident

Eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

HBV

Hepatitis B virus.

HIV

Human immunodeficiency virus.

Other Potentially Infectious Materials

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral

The piercing of mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

Regulated Waste

Liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Source Individual

Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

Universal Precautions

An approach to infection control that assumes that all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

APPENDIX B

HEPATITIS B VACCINE DECLINATION

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Name: Signature:

Date:

CONTRACTOR SAFETY MANAGEMENT

Program Statement

The University of North Alabama and its contractors share responsibility for providing a safe and healthful working environment during construction, maintenance or related activities on University property. Therefore, UNA requires that contractors (at a minimum) meet federal, state, and local environmental, health, and safety regulations.

Procedures

All prospective contractors will be informed of this plan and the safety requirements of each project.

Proposals will be accepted for consideration only if they address all the requirements listed in the Request for Proposals and/or any other contract requirements.

The quality of safety and health programs and site specific plans will be one of the factors considered in the awarding of contracts.

Contractors that do not adequately meet an acceptable level of safety performance will be eliminated from the bid process.

Contractors are responsible for enforcing safe practices and procedures during all stages of their projects. Injuries, illnesses and near misses must be documented promptly. Systematic and/or repeated violations of safety regulations can be grounds for default of a contract.

At the completion of the project, the contractors' safety and health performance will be evaluated, documented, and used as a reference for future contractual agreements.

Exemptions

Maintenance and repair operations on electronic equipment, instruments, and other similar devices are excluded from this plan. These operations require highly specialized and skilled technical personnel, who should be knowledgeable of the specific hazards and their means of protection.

Pre-Qualification Requirements

Contractors seeking University contracts shall submit the following information:

A copy of the company's safety and health program (minimum requirements listed under the heading: Contractor's Program).

A copy of the OSHA 200 Log covering records of the establishment in the preceding three years.

In addition, a determination will be made to decide if a project warrants specific safety and health plans. This determination will be based upon several factors such as:

Nature of work to be performed.
Expected risks associated with tasks.
Location of activities.
Expected duration of project activities.
Size of the required task force.

When site specific plans are deemed necessary, the contractor must submit a detailed task hazard analysis along with the description of the methods used to monitor and control the exposure to these hazards.

A contractor shall assign responsibility for safety to a qualified employee who will be on-site during the contract. This employee will be responsible for inspections, surveillance, training, documentation procedures, emergency alerting, and any other compliance duties.

Only companies with a three year average incident rate not exceeding the national average in the applicable SIC code, as published by the Bureau of Labor Statistics, will be considered in the bid process.

Contractor's Program

The contractor's safety and health program at a minimum will contain the following written information:

Company's safety policy statement, signed by the principal officer of the company.

Organization's health and safety goals and the objectives for meeting these goals.

Assignment of responsibilities concerning safety and health.

Identification of the hazards and operations that may require specific safety and health procedures.

Written safety programs addressing hazard prevention and control. These programs may include topics such as hazard communication, fall protection, lock out/tag out, personal protective equipment, or any other subject that applies to regular operations conducted at the company.

Requirements for safety and health training and documentation of training completion.

Emergency response plans.

Responsibilities

Purchase Office

Communicate the health and safety contractual requirements to interested contractors.

Provide a copy of the UNA Guidelines on Safety and Health for Service Contracts to interested contractors.

See Appendix A of this chapter for a copy of these guidelines.

Distribute contract application materials for review and consideration.

Decide, together with the Project Officer and the Safety Officer whether contractors meet all pre-qualification requirements and the need for site specific safety and health plans and any other related documentation.

Project Officer

The Project Officer is ordinarily the person requesting the contractual service (s), unless another person is designated by the Vice President for University Advancement and Administration. The Project Officer ensures that the project is completed according to the terms and conditions of the agreement. The Project Officer will:

Inform the contractor of the requirement to observe all environmental, health, and safety provisions specified in the contract.

Notify the contractor of any hazards, special precautions, and any safety and health concerns before the start of the project.

Decide, along with the Director of Purchasing and the Safety Officer, on the need for site specific safety and health plans and any other related documentation.

Provide the Safety Officer and the Director of Public Safety with a tentative construction schedule and any notification of changes.

Make sure that the Safety Officer is notified of all pre-construction safety meetings held with contractors.

Monitor the contractor work performance and determine if contractor is complying with the health and safety plan and pertinent environmental, health, and safety regulations. Notify contractor in cases of non-compliance. Refer any questions regarding compliance with specific regulations to the Safety Officer.

Notify the Safety Officer of construction accidents and provide with a copy of the contractor accident report.

Ensure that the contractor completes all required permits including training documentation records.

Safety Officer

Upon the request of the Vice-President for University Advancement and Administration, review project proposals to ensure that all-appropriate health and safety requirements and pertinent information have been incorporated.

Review Contractor Safety Program and approve site specific safety and health plans.

Verify implementation of standard safety practices through regular communication with contractor safety and health representative.

Provide contractors with a copy of the University of North Alabama Health & Safety Manual.

Upon project completion, perform an evaluation of the contractor's safety performance, and submit the results in writing to the Vice President for University Advancement and Administration, the Project Officer, and the Director of Purchasing.

Appendix B of this chapter presents a form that can be used for this evaluation.

Contractors

Comply with UNA Contractor Safety Management.

Apply acceptable principles for the prevention of accident and illnesses, and the protection of the environment.

Assure that its employees have completed appropriate health and safety training and provide documentation to the Project Officer of training completion.

Provide safety orientation to all employees prior to work on site.

Ensure that all equipment brought onto University property is in safe working order, with all safety features in place.

Obtain approval before bringing onto University property any substance that is regulated by OSHA, DOT, or EPA as a hazardous material. No hazardous materials shall be brought onto University property unless the products are in acceptable containers, appropriately labeled, and with a respective MSDS.

Take appropriate action to minimize the creation of hazardous wastes.

Follow acceptable procedures for the handling, accumulation, and disposal of regulated hazardous wastes.

Report promptly injuries, illnesses, or other significant safety issues to the project officer.

Conduct and document weekly safety inspections of the work site (for extended work).

Conduct weekly safety meetings for all employees (for extended work).

Audits

The University Safety Officer will audit this program at least every three years, commencing with the approval of the UNA Health and Safety Manual, to evaluate program effectiveness.

The program will be corrected for any deficiency detected by this triennial audit.

APPENDIX A
GUIDELINES ON SAFETY AND HEALTH FOR SERVICE CONTRACTS

Program Statement

The University of North Alabama and its contractors share responsibility for providing a safe and healthful working environment during construction, maintenance or related activities on University property. Therefore, UNA requires that contractors (at a minimum) meet federal, state, and local environmental, health, and safety regulations.

Pre-Qualification Requirements

Contractors seeking University contracts shall submit the following information:

- A copy of the company's safety and health program (minimum requirements listed under the heading: Contractor's Program).
- A copy of the OSHA 200 Log covering records of the establishment in the preceding three years.
- Site specific safety and health plans.

Required by this project: ☐

Not required by this project: ☐

Only companies with a three year average incident rate not exceeding the national average in the applicable SIC code, as published by the Bureau of Labor Statistics, will be considered in the bid process.

Contractor's Safety and Health Program

The contractor's safety and health program at a minimum will contain the following written information:

- Company's safety policy statement, signed by the principal officer of the company.
- Organization's health and safety goals and the objectives for meeting these goals.
- Assignment of responsibilities concerning safety and health.
- Identification of the hazards and operations that may require specific safety and health procedures.
- Written safety programs addressing hazard prevention and control. These programs may include topics such as hazard communication, fall protection, lock

out/tag out, personal protective equipment, or any other subject that applies to regular operations conducted by the contracting company.
- Requirements for safety and health training and documentation of training completion.
- Emergency response plans.

Site Specific Safety Plans

When site specific plans are deemed necessary, the contractor must submit a detailed task hazard analysis along with the description of the methods used to monitor and control the exposure to these hazards.

APPENDIX B

POST-JOB EVALUATION OF CONTRACTOR HEALTH AND SAFETY PERFORMANCE

Contractor Name:

Address:

Phone Number:

Contact Person:

Project Name:

Start and End Dates:

UNA Project Officer:

Evaluation Conducted By: (names, titles)

GENERAL INFORMATION

Total Man-hours Worked	
Total First Aid Cases	
Total Medical Treatment Cases	
Total Lost Time Cases	
Total Property Damage Cases	
Project Recordable Incident Rate	

CATEGORY RATINGS

Commitment to Health and Safety	N/A 1 2 3 4 5
Quality of Onsite Supervision	N/A 1 2 3 4 5
Quality of Onsite Safety Coordination	N/A 1 2 3 4 5
Reporting of Injuries/Incidents	N/A 1 2 3 4 5
Participation in Accident Investigations	N/A 1 2 3 4 5
Timely Submittal of Written Investigation Reports	N/A 1 2 3 4 5
Compliance to Site Safety Rules	N/A 1 2 3 4 5
General Hazard Control	N/A 1 2 3 4 5
Use of Personal Protective Equipment	N/A 1 2 3 4 5
Housekeeping Practices	N/A 1 2 3 4 5
Condition of Tools and Equipment	N/A 1 2 3 4 5

NOTE: 1 – Unacceptable, 2 – Improvement Needed, 3 – Meets all Requirements, 4 – Exceeds Requirements, 5 – Outstanding

ADDITIONAL COMMENTS

Does the Safety Officer recommend the contractor be considered for future use?

☐ YES ☐ NO

PERSONAL PROTECTIVE EQUIPMENT

Program Statement

Hazardous conditions that may cause injury or impairment of any body function will be corrected by methods that eliminate or reduce the hazard. The primary methods of control will be engineering controls or safe work practices. Personal protective equipment (PPE) will be used only when the primary methods are not feasible, or when they cannot reduce the risks to an acceptable level.

General Requirements

Protective equipment includes eye, head, and extremity protection, protective clothing, respirators, and fall protection.

Protective devices when provided, shall be used and maintained in a sanitary and reliable condition.

All personal protective equipment shall be approved and of safe design and construction for the intended use.

Hazard Identification

Supervisors will inspect the work place to assess job hazards.

Appendix A of this chapter gives an example of a hazard assessment checklist.

When the inspection reveals unacceptable conditions, corrections will be implemented.

If personal protective equipment is chosen as corrective measure, it will be selected specifically to protect from the hazards identified during the workplace inspection.

Upon request, the safety officer will provide assistance on the selection of control methods and PPE.

Users of PPE should receive training on the correct use, limitations, care, maintenance, and service life of the equipment they have been assigned to wear.

PPE Selection Guidelines

The following guidelines can be used for the selection of proper PPE.

Eye and face protection:

All operations involving the exposure to impacting particulate matter, pressurized or hot fluids, acids and bases, irritant chemicals, and injurious light radiation, require eye and face protection.
Protective eye and face devices shall comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection."

Impact protection:

Machine tool operations, assembly, construction, carpentry, plumbing, sanding, grinding, polishing, and lawn maintenance are just a few operations that can generate flying fragments, particles, sand, and dirt.

Operations that generate high velocity, multi-directional particles may warrant significant side and eyebrow protection. Each person conducting these operations must wear spectacles with side protection or goggles. If face shields are selected, they should be worn over primary eye protection.

Personnel who require prescription lenses should be provided with eye protection that incorporates the prescription in its design, or wear protective devices over the prescription lenses.

Side protection is encouraged whenever eye protection is used.

Heat protection:

Potential hazards from hot operations include hot sparks, splash from hot materials, and high temperature. For normal hot work environment in which the major hazard is hot sparks, most type of spectacles with side protection and goggles that meet the ANSI-Z87.1 standard, are considered acceptable. If a splash hazard from hot material is possible, then a face shield worn over a cup or cover goggle with indirect ventilation will be the optimum choice.

Optical radiation protection:

Electric arc welding, gas welding, cutting, and torching can produce ultraviolet (UV) and infrared (IR) radiation that can quickly injure the eye. Shading of the lenses is necessary to provide protection against these types of optical radiation. A filter lens shade chart provided in Appendix B of this chapter can be used to select the proper lens.

Electric arc welders can use a hand-held welding helmet, a welding helmet, a stationary window welding helmet, or a lift-front welding helmet. In any case the filter lens shade needed is between 10 to 14.

Gas welding requires use of welding goggles or a welding face shield. The UV radiation is much less of a problem for this type of welding process. The filter lens shade should be between 4 and 8.

Cutting and torch brazing require use of cup goggles, or spectacles with a headband temple, or cover welding goggles, or a welding face shield. For cutting, the recommended filter lens shade is 3 to 6, and for torch brazing the recommendation is 3 to 4.

For torch soldering the recommended eyewear is any approved spectacle with side shields or a face shield worn over primary vision protection. The recommended lens shade is 1.5 to 3.

Chemical agents protection:

The best protection for chemical hazards is provided by goggles with indirect ventilation or no ventilation at all. For splash protection, an eyecup goggle or cover goggle is recommended. If the chemical hazard is in the form of an irritating mist or vapor, then a cover goggle with no ventilation is appropriate. Where a severe chemical hazard exists, the use of a face shield in conjunction with goggles is the best choice.

Dust protection:

Dust can be very irritating to the eye. Situations in which dust can be a significant problem include sawdust or sanding dust in woodworking operations, lawn maintenance, buffing and cleaning.

If dust in the working area is severe enough to impair vision, then goggles are the choice. Both, ANSI Z87.1 and OSHA, call for eyecup goggles or cover goggles.

Hand protection:

Hand protection is required when there is a potential for skin absorption of harmful substances, cuts and lacerations, abrasions, punctures, chemical burns, thermal burns, and freezing.

The selection of hand protection will be based on the nature of the hazard, product performance related to the hazard, conditions at which the protective device will be used, and duration of use.

When gloves are used for chemical protection, consideration should be given to the chemical compatibility of glove materials. Glove manufacturers have developed extensive databases with information on chemical compatibility that can be used to select the most appropriate product for the application under consideration. Information is based on permeation rates, breakthrough times, penetration potential and degradability.

In general:

- √ Keep in mind that no glove material is impermeable to every type of chemical.
- √ Wear gloves every time you work with hazardous substances.
- √ Use leather gloves when handling broken glass or heavy equipment, synthetic gloves when handling chemicals, insulated gloves for temperature extremes, and latex gloves for handling biological and infectious materials.
- √ Inspect the gloves each time you put them on. To look for holes in chemical gloves, fill them with air and then immerse them in water.

Head protection:

Helmets for the protection of the head from falling and flying objects and from limited electric shock and burn will be provided for construction work in campus.

Foot protection:

Low-heeled, closed-toe shoes shall be worn in all laboratory operations where there is likelihood of exposure to spilled chemicals.
When personnel are exposed to the risk of foot injuries from falling objects, projections or crushing action, they shall wear safety-toe footwear. Safety shoes must meet the requirements and specifications in ANSI Z41.1.

Hearing protection:

All personnel exposed to an equivalent eight-hour time weighted average sound level of 90 dBA shall wear hearing protection.

Hearing protectors must attenuate the sound level below an eight-hour time weighted average of 85 dBA.

Upon request, the safety officer will assist in the selection of hearing protectors.

Personnel shall not be prevented from wearing protectors for reduction of annoying sound or high level of sound pressure of short duration.

Hearing protectors are considered "personal" equipment and shall not be worn by other individuals, unless adequately cleaned and sanitized.

Respiratory protection:

Any activity that involves periodical exposure to toxic chemicals will be evaluated by means of air sampling.

Controls will be provided when the evaluated air concentration exceeds the limits established by accepted guidelines of occupational exposures (permissible exposure limits, threshold limit values, recommended exposure limits, short-term exposure limits, or ceiling values).

The primary methods of control for airborne hazards are engineering controls and safe work practices.

Respirators will be reserved for temporary, infrequent tasks or when the application of the primary methods is non-feasible.

Supplied air respirators such as self contained breathing apparatuses, operating under the pressure demand mode will be used for operations that involve uncontrolled releases of chemical agents.

For temporary operations that use chemical products for which the manufacturer recommends respirators, the type of product selected will be of the same or a higher level of protection, as established in MSDSs.

Operations at UNA that require respirators:

Spray-Painting: Spray-painting operations conducted in the spray room of the Maintenance Building.

Selected respirator: Half or full-face respirators with filter and organic vapor canister.

Welding: Welding operations conducted in enclosed spaces:

Selected respirator: *It depends on metals involved. Heavy metals such as nickel, lead, chromium or beryllium require supply air respirators operating under pressure demand mode.*

Repairs with Asbestos: Repairs that may disturb asbestos and lead containing materials.

Selected respirator: Air purifying respirators with N, P or R 100 filters.

UNA employees will not be allowed to enter Immediately Dangerous to Life and Health (IDLH), oxygen deficient, or unknown atmospheres.

UNA employees will not be allowed to remove asbestos or lead containing materials.

Respirator selection criterion:

Air purifying respirators will be selected for atmospheres of known content and concentration, and when the chemical agents exhibit acceptable warning properties or the respirator possesses end-of-service-life indication. Acceptable warning properties include a physiological response such as smell, taste, or slight irritation perceived at a concentration below the limit of exposure.

Only NIOSH approved respirators will be considered.

Medical Evaluation:

All UNA employees required to wear a respirator will receive a medical examination. The examination will be conducted by the University Health Services.

At a minimum the examination will consist of the administration of a questionnaire (model found in Appendix C of 29 CFR 1910.134) and any other medical tests, as deemed necessary by the physician or other licensed health care professional.

Supervisors must request the medical examination in writing by completing the form presented in Appendix C of this chapter.

Written results of the medical evaluation will be reported to the employee, supervisor and the safety officer. Records will be retained in accordance with 29 CFR 1910.1020.

Fit testing:

Qualitative or quantitative respirator-fitting testing will be used for half face, air-purifying respirators. Quantitative fit testing will be used for full face, air purifying respirators and supplied air respirators.

Qualitative fit tests can be provided by the Occupational and Environmental Health Laboratory.

Fit tests will be conducted according to standard procedures as defined by 29 CFR 1910.134, Appendix A.

The fit test will be repeated annually. Records of the test will be maintained in the employee department and by the Safety Officer.

A fit test form is given in Appendix D of this chapter.

Use of respirators :

Tight-fitting face pieces will not be worn under conditions that prevent a good face seal. These conditions include a growth of beard, sideburns, or corrective glasses.

For respirators without end of service life indication, chemical cartridges will be replaced after each work shift. Filters will be replaced after detection of any noticeable resistance to the airflow.

Supervisors will ensure that employees perform a user seal check of the respirator each time they put on. Instructions for performing this test can be found in Appendix B-1 of 29 CFR 1910.134 or can be requested to the Safety Officer.

Training:

The safety officer will conduct training on respiratory protection principles and correct use of respirators.

The training will include:

A review of the airborne hazards the employee is exposed.

The identification of respirator and cartridge that will best protect the employee against the substances in the work area.

Donning and doffing techniques and how to choose the proper size respirator.

Instructions on the care, use and limitations of the respirator.

Cleaning and disinfecting:

Respirators will be cleaned and disinfected as often as necessary to assure a sanitary condition.

Respirators will be cleaned every day and disinfected weekly.

Emergency respirators will be cleaned and disinfected after each use.

Proper procedures for cleaning and disinfecting must follow manufacture's recommendations or Appendix B-2 of 29 CFR 1910.134.

Storage:

Respirators will be stored in a clean and sanitary location and protected from damage, contamination, dust, sunlight, extreme temperature, and damaging chemicals.

Standard storage procedures will follow manufacture's recommendations.

Chemical cartridges and mechanical filters shall be maintained in sealed packages and away from the contact with chemicals in any physical form (solid, liquid or vapor).

Inspections:

Respirators used routinely will be inspected by the user for deteriorated parts every time they are used.

Special attention shall be paid to the condition of diaphragm membranes in the inhalation and exhalation valves. Any worn part of the respirator shall be replaced.

Respirators used in emergencies will be inspected at least once a month and after each use. All the inspections should be documented.

Inspections will be conducted by the area supervisor and documented in form such as that found in Appendix E of this chapter.

Program Evaluation:

The respiratory protection program will be evaluated annually to determine effectiveness in personnel protection.

References

29 CFR 133 and 135 and Appendices.
The eye protection program. Occupational Health & Safety, August 1995. Pgs. 28-59.

APPENDIX A

HAZARD ASSESSMENT FOR THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT

Department: Section:

Operation or task evaluated:

Is the employee exposed to any of these hazards?

HAZARD	Yes	No
Impact		
Penetration or laceration		
Compression		
Biological agents (other than infectious agents)		
Infectious agents		
Reactive chemicals		
Explosives		
Toxic chemicals		
Flammable and combustible chemicals		
Extreme temperatures		
Lasers		
Ergonomics (force, awkward postures, high frequency)		
Optical radiation		
Ionizing radiation		
Electrical		
Electromagnetic fields		
Microwaves		
Falls		

Other than the listed hazards:

Additional notes:

Inspected by: Signature:
Date of inspection:

APPENDIX B
RECOMMENDED PROTECTION IN WELDING OPERATIONS

Welding operation	Shade No.
Shielded metal-arc welding - 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10
Gas-shielded arc welding (nonferrous) - 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous) - 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding:	
3/16-, 7/32-, 1/4-inch electrodes	12
5/16 -, 3/8-inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

NOTE: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

APPENDIX C
REQUEST FOR MEDICAL EVALUATION

Please provide all medical tests that you consider necessary to assure that the employee identified below is able to wear a respirator.

Employee name:

Employee SS#:

Department:

Job Designation:

Job Description:

Respirator Characteristics

Type of respirator used by employee (please mark all that apply)

Mask

☐ Half face mask ☐ Full face mask

Type

☐ Air-purifying ☐ self contained breathing apparatus

☐ Airline respirator

Filtering units (for air purifying respirators only)

☐ Filter ☐ Chemical cartridge

Estimated weight of respirator (including filters):

Respirator use

Expected duration of use (hours per day):

Expected frequency of use (days per month):

Expected physical work effort: ☐ low ☐ medium ☐ high

Additional protective clothing worn:

Expected temperature extremes:

Supervisor name:

Supervisor signature:

Date:

APPENDIX D
FIT TEST RECORD

Name of employee:

SS# of employee:

Department:

Job Title:

Fit Test	Respirator type	Respirator make & model	Respirator size	Test result	Date	Signature

Notes:

Fit Test

QLFT: qualitative fit test (amyl acetate, saccharine, Bitrex, irritant smoke)
QNTF: quantitative fit test (test aerosol, condensation nuclei counter, controlled negative pressure)

Respirator Types:

APRHF: air purifying half face
APRFF: air purifying full face

SCBA: self-contained breathing apparatus
AL: air line

Test Results:

For QLFT, enter YES or NO
For QNFT, enter fit factor

APPENDIX E
EMERGENCY RESPIRATOR INSPECTION

Unit:

Location:

Last date of hydrostatic testing:

After inspecting the unit please enter F(fail) or P(pass) as appropriate:

Face-piece	Head Straps	Valves	Connecting tube	Pressure*	Alarm	Regulator	Date of inspection

* The unit fails if the pressure falls to 90% of the manufacturer's recommendation.

Inspected by:

Name:

Signature:

HEARING CONSERVATION PROGRAM

Program Statement

The University of North Alabama will provide hearing protection for any operation that generates noise levels above acceptable limits.

The primary methods of protection are engineering or administrative controls. Personal protective equipment (PPE) will be adopted only as a complementary or alternative measure when the primary methods are not feasible or do not provide the required level of protection.

Objectives

The objectives of this chapter are to ensure that:

- all tasks with a potential for noise exposure are identified,
- personal exposures to noise levels are evaluated,
- protection to hazardous levels of noise is provided through a hearing conservation program, and
- exposed employees are included in a medical surveillance program.

Exposure Assessment

The following activities involve noise exposure at the UNA campus:

- grounds and lawn maintenance
- service of mechanical rooms
- carpentry work.

Noise monitoring will be conducted for all operations that are suspected to expose employees above the action level (85 dBA).

See Appendix A of this chapter for a glossary of terms.

Sampling services can be obtained from the UNA Occupational and Environmental Health Laboratory.

Employees will be notified of the sampling results no later than 15 working days after completion of the evaluation.

Employees with personal exposures exceeding an 8-hour Time Weighted Average (TWA) of 85 dBA (slow response) or equivalent will be included in a hearing conservation program.

Work conditions with average exposures at or above 90 dBA will be studied to find possible corrective measures. Preference will be given to engineering control methods.

The University Safety Officer and the UNA Occupational and Environmental Health Laboratory may be contacted for these studies.

Hearing Conservation Program

This program will consist of the following activities: audiometric testing, training, medical surveillance, and record keeping.

Inclusion criteria:

All UNA employees whose 8-hour TWA evaluations are equal or exceed 85 dBA.

Audiometric Testing

Employees included in the hearing conservation program will receive an annual audiometric test.

See Appendix B of this chapter for a listing of the conditions that apply to this test.

Supervisors may request this test at the University Health Services.

New employees assigned to operations involving noise exposures at or above 85 dBA, will receive the initial audiometric test within the first six months of assignment.

The first audiogram obtained for each worker will be used as a baseline audiogram.

Standard Threshold Shift

If the comparison of a repeat and a baseline audiogram reveals a standard threshold shift (as defined in 29 CFR 1910.95 (g)(10)) of 10 dB or more, the following steps will be taken:

The affected person will be notified within 21 days of the determination.

Proper hearing protectors will be selected based on performance rating and noise characteristics, if a unit has not been assigned to the affected person.

The safety officer will assist in the selection of hearing protection devices.

The current protectors will be replaced with one of greater attenuation or better fit, if a unit has been already assigned to the affected person.

Investigation may be needed to assess if the hearing protector may aggravate a pre-existing medical pathology.

Personal Protection

Hearing protectors will be provided for all employees with 8-hour TWAs of 90 dBA or more.

Hearing protectors will be replaced as necessary.

Supervisors shall ensure that protectors are worn during noisy operations.

Employees will select protectors from a variety of acceptable products based on fitting and comfort characteristics.

Training

All personnel exposed at or above an 8-hour TWA of 85 dBA will receive training. The training will include the following topics:

√ the effects of noise on hearing
√ the mechanisms for noise control
√ the purpose of hearing protectors, including attenuation factors
√ proper use and care of the selected hearing protection
√ the purpose of the audiometric test.

The University Safety Officer will coordinate the offering of this training.

Access to Information

A copy of the noise standard 29 CFR 1910.95 is available to affected employees.

The copy can be found at the OSHA home page (www.osha.gov) under Regulations (general industry, 29 CFR 1910.95).

The Safety Officer will provide a hard copy of this document if it cannot be obtained from the Internet.

Material used for training will be available upon request, to personnel from regulatory agencies.

Record Retention

Results of audiometric testing will be retained for the duration of employment of the affected employee.

Noise monitoring results will be maintained for at least two years.

APPENDIX A
GLOSSARY OF TERMS

Audiometric tests

Pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency taken separately for each ear.

Noise Action Level

Any personal exposure to noise equivalent to 85 dBA for eight hours.

Noise Permissible Exposure Limit

Any personal exposure to noise equivalent to 90 dBA for eight hours.

Presbycusis

Normal change in hearing level that occurs with aging.

Sound Pressure Level

The level of sound pressure measured with a special logarithmic scale.

Standard threshold shift

A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

Weighting Network A

A sound weighting attenuation scale that replicates the sensitivity of the human ear at low levels of sound pressure.

APPENDIX B
AUDIOMETRIC TESTING

Professional qualifications of the person performing the audiometric testing

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations.

A technician who performs audiometric tests must report to an audiologist, otolaryngologist or physician.

Baseline audiogram

Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to noise.

Employees will be notified of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

Annual audiogram

Each employee's annual audiogram shall be compared to that employee's baseline audiogram.

If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.

If a comparison of the annual audiogram to the baseline audiogram confirms a standard threshold shift of 10 dB or more, the employee shall be informed of this fact in writing, within 21 days of the determination.
A new baseline may be adopted if subsequent audiometric testing reveals that the standard threshold shift is persistent or has significant improvement over the baseline audiogram.

In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level.

Correction of the annual audiogram must follow the procedure described in Appendix F of 29 CFR 1910.95: "Calculation and Application of Age Correction to Audiograms."

Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of the American National Standard Specification for Audiometers, S3.6-1969.

Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in Appendix C of 29 CFR 1910.95: "Audiometric Measuring Instruments."

Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D of 29 CFR 1910.95: "Audiometric Test Rooms."

Audiometer Calibration

The functional operation of the audiometer shall be checked before its use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E of 29 CFR 1910.95: "Acoustic Calibration of Audiometers."

Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

An exhaustive calibration shall be performed at least every two years in accordance with the American National Standard Specification for Audiometers, S3.6-1969.

PERMIT REQUIRED CONFINED SPACES

Program Statement

UNA employees will be protected from the hazards that may arise during the entry into confined spaces.

Objectives

The objectives of this chapter are to ensure that:

- permit required confined spaces in the UNA campus are identified,
- the entry into these spaces is conducted according to an entry plan,
- physical and human resources established in the entry plan are provided,
- employees participating in any activity related to confined space entry receive proper training.

Definitions

Confined Space

A confined space (CS) is any space that:

√ it is large enough that an employee can bodily enter and perform assigned work,

√ it has limited or restricted means of entry or exit, and

√ it is not designed for continuous human occupancy.

Permit Required Confined Space

A permit required confined space (PRCS) is a confined space that has one or more of the following characteristics:

√ it contains or has the potential to contain a hazardous atmosphere*,

√ it contains materials that can engulf the entrant,

√ it has an internal configuration that can trap or asphyxiate the entrant, or

√ it contains any other recognized serious safety or health hazard.

(*) Hazardous atmosphere means an atmosphere that can cause death, incapacitation, injury, illness, or impaired physical or mental ability. Causing agents include:

√ flammable gas, vapors, or mist in excess of 10% of the lower flammable limit (LFL),

√ airborne combustible dust at a concentration that exceeds the LFL,

√ atmospheric oxygen concentration below 19.5% or above 23.5% by volume,

√ atmospheric concentration of a substance at or above the permissible exposure limits (OSHA), the threshold limit values (ACGIH), the recommended exposure limits (NIOSH) or any other accepted occupational standard,

√ other atmospheric conditions that are considered immediately dangerous to life and health (IDLH) conditions.

General requirements

With the help of the audit provided in Appendix A of this chapter, supervisors will inspect the workplace to identify permit required confined spaces.

Specific entry plans will be established for those PRCS that must be entered by UNA employees or University contractors.

The safety officer will assist in the identification of PRCS and in the creation of specific plans.

A sign reading *"Danger-Permit Required Confined Space, Do Not Enter" will* be posted at the location of each space.

Entry Plan

The entry plan will be specific for each PRCS and will:

√ provide instructions and procedures for safe entry,

√ establish the locations for the placement of placards and signs,

√ identify and assign responsibilities of those employees who will be participating in the effort (entry supervisors, attendants and entry personnel),

√ list potential hazards expected during the entry. This list shall include:

sources of hazardous energy such as pneumatic and hydraulic pressure, high or low temperature, mechanical stress, and electrical energy;

physical hazards such as noise, vibration, heat stress, ionizing and non-ionizing radiation, fire, potential for falls, entangling and trapping;

toxic chemicals and biological materials;

ergonomics hazards such as forceful exertions, heavy lifting or pulling, awkward postures, lack of visibility;

√ describe the techniques used for energy isolation and control (control of hazardous energy sources shall comply with 29CFR1910.147),

√ list the techniques used for purging, flushing, cleaning and ventilating confined spaces that contain toxic chemicals,

√ establish safe conditions for entry,

√ identify testing and air monitoring equipment needed during the entry,

√ identify additional equipment needed for the entry such as blowers, radios, PPE, retrieval systems, and fall protection.

Entry

Before entering the space, supervisors will complete a permit that authorizes the entry. The permit shall be posted at the entry of the PRCS for as long as the entry operation lasts.

The entry permit format will be as specific as possible for the PRCS. An example of a generic permit is given in Appendix B of this chapter.

The entry permit will be cancelled at the conclusion of the operation or at any other time when a hazardous condition not accepted in the entry plan, develops.

Cancelled permits shall be retained for at least one year.

Frequent tests of the space will ensure that conditions are maintained safe during entry.

In case of oxygen deficiency, the space will be ventilated prior and during entry.

When testing for atmospheric hazards, test first for oxygen, and then for combustible and toxic gases and vapors.

Provide at least one attendant outside the permit space.

Duties of the attendant are listed in Appendix C of this chapter.

Establish a contract with a rescue team so that it will be readily available in case of emergency.

Identify the emergency rescue provider in the entry permit.

Protect the entrance to a confined space.

Guard any vertical opening to a confined space by standard railing or a temporary barrier when the permanent cover is removed.

Training

All personnel entering or participating in any activity related to confined space entry shall receive training.

Initial training will be offered at a the time of assignment. Retraining will be offered when:

√ assign duties change;
√ the configuration of the space is modified;
√ standard procedures are not observed.

Upon request, training will be provided by the UNA Safety Officer.

APPENDIX A
AUDITING A PERMIT REQUIRED CONFINED SPACE

IS THIS A CONFINED SPACE?

		YES	NO
1.	Can a person bodily enter and perform work?	☐	☐
2.	Does the space have limited or restricted means for entry or exit?	☐	☐

Note: The size of the opening is not the only characteristic making the access or egress difficult. Some confined spaces with very large openings must be accessed by using portable ladders, hoists or other devices.

3.	Is the space designed for continuous employee occupancy?	☐	☐

IF THE ANSWER WAS YES TO THE FIRST TWO QUESTIONS AND THE ANSWER WAS NO TO THE THIRD QUESTION, THEN YOU ARE DEALING WITH A CONFINED SPACE.

IF YOU ARE DEALING WITH A CONFINED SPACE GO TO THE NEXT SECTION. OTHERWISE, STOP HERE.

IS THIS CONFINED SPACE A PERMIT REQUIRED CONFINED SPACE?

1. Does it contain or have the potential to contain a hazardous atmosphere? ☐ ☐

A hazardous atmosphere is an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self rescue, injury, or acute illness from one of the following causes:

(i) *Flammable gas, vapor, or mist in excess of ten percent of the lower flammable limit.*
(i) *Airborne combustible dust at a concentration that exceeds its lower flammable limit.*
(ii) *Atmospheric oxygen concentration below 19.5% or above 23.5%.*
(iii) *Atmospheric concentration of any substance in excess of its permissible exposure limit.*

2. Does it contain a material that has the potential for engulfing an entrant? ☐ ☐

Engulfment means the surrounding and effective capture of a person by a liquid or a finely divided substance that can cause death by asphyxiation or they can exert enough force on the body to cause death by strangulation, constriction, or crushing.

3. Does it have an internal configuration such that a person who enters could be trapped or asphyxiated ☐ ☐

4. Does it contain any other recognized serious safety Or health hazards? ☐ ☐

IF THE ANSWER TO ANY OF THE QUESTIONS 1 TO 4 WAS YES, THEN THE CONFINED SPACE IS A PERMIT REQUIRED CONFINED SPACE.

APPENDIX B
ENTRY PERMIT

Permit valid for 8 hours only. All copies of permit will remain at job site until job is completed.

DATE:
DEPARTMENT:
PERMIT SPACE DESIGNATION:
PURPOSE OF ENTRY:

SUPERVISOR
Name:
SS# (optional):
ATTENDANT
Name:
SS# (optional)
ENTRY TEAM
Name:
SS# (optional)

Name:
SS# (optional)

Name:
SS# (optional)

Name:
SS# (optional)

Name:
SS# (optional)

Requirements to be completed and reviewed prior to entry

_____ Lock Out/De-energize/Try-out
_____ Line(s) Broken-Capped-Blanked
_____ Purge-Flush and Vent
_____ Ventilation
_____ Secure Area (Post and Flag)
_____ Standby Safety Personnel
_____ Full Body Harness w/"D" ring
_____ Emergency Escape Retrieval Equip
_____ Lifelines
_____ Fire Extinguishers
_____ Lighting (Explosive Proof)

_____ Protective Clothing
_____ Respirator(s) (Air Purifying)
_____ Burning and Welding Permit

Note: Items that do not apply enter N/A in the blank space.

Monitoring Results

Frequency of monitoring:

- ☐ Continuous
- ☐ Periodical: Every _____ minutes

Percent of Oxygen (19.5% to 23.5%) ___ ___ ___ ___ ___ ___ ___ ___
Lower Flammable limit (<10%) ___ ___ ___ ___ ___ ___ ___ ___
Carbon monoxide (*35 ppm) ___ ___ ___ ___ ___ ___ ___ ___
Aromatic Hydrocarbons
(*1ppm, **5ppm) ___ ___ ___ ___ ___ ___ ___ ___
Hydrogen Cyanide (Skin) (**4ppm) ___ ___ ___ ___ ___ ___ ___ ___
Hydrogen Sulfide (*10 ppm, **15ppm) ___ ___ ___ ___ ___ ___ ___ ___
Sulfur Dioxide (*2 ppm,** 5ppm) ___ ___ ___ ___ ___ ___ ___ ___
Ammonia (**35ppm) ___ ___ ___ ___ ___ ___ ___ ___

* Time Weighted Average for eight hour exposures.
** Short-term exposure limit established for up to 15 minutes exposures.

Remarks:_____

Instrument brand, model, and serial number:
Instrument 1:
Instrument 2:
Instrument 3:
Instrument 4:

Emergency Response Team
Name of contact:
Telephone number:

Supervisor Authorizing – All conditions satisfied

Signature: Date:

APPENDIX C
DUTIES IN PERMIT REQUIRED CONFINED SPACES

Duties of Authorized Entrants

Know the hazards, including information on the mode, signs or symptoms, and consequences of the exposure.

Properly use of equipment including energy controlling devices, ventilation systems, air monitoring equipment, and personal protective equipment.

Communicate continually with attendant.

Alert attendant in case of signs or symptoms of exposure, or detection of a prohibited condition.

Exit from the space if an order of evacuation is given, or a dangerous or prohibited condition is detected.

Duties of Attendants

Know the hazards, including information on the mode, signs or symptoms, and consequences of the exposure.

Be aware of possible behavioral effects of exposures.

Monitors and maintain contact with entrants.

Remain outside the confined space for as long as the operation lasts.

Evacuate in case a prohibited or dangerous condition develops, or in case behavioral effects of exposure are noticed.

Summon rescue if the authorized entrants need assistance to escape from the permit space.

Warn unauthorized persons to stay away from the permit space.

Perform non-entry rescue as specified in standard procedures.

Duties of Entry Supervisors

Know the hazards, including information on the mode, signs or symptoms, and consequences of the exposure.

Verify that the permit is complete, and that all the procedures for safe entry have been followed.

Authorize and cancel entry permits.

Verify that rescue services are available.

Remove unauthorized personnel from confined spaces.

Verify that operations are consistent with procedures defined on the entry permit.

APPENDIX D
PERMIT REQUIRED CONFINED SPACES AT UNA

The campus of the University of North Alabama contains at least two permit required confined spaces (according to 29 CFR 1910.146). These spaces are the steam boilers and the underground service tunnels.

Steam Boilers.

Steam boilers are serviced annually by university employees who must access the different internal sections of these units. One particular area of concern is the mid-section of the shell that encloses the fire tubes. Entrance into this section is particularly difficult because of its physical configuration (the person must crawl between horizontal tubes) and the very limited free space, representing a clear entrapment hazard. In addition to this physical hazard, the use of chemicals may bring about a toxicity problem. Morpholine, cyclohexylamine and hydrochloric acid are used as cleaning and corrosion treatment agents. Sodium nitrite and sodium hydroxide are used as water treatment additives. In addition to specific toxic effects, manufacturers of these chemicals caution about the generation of toxic decomposition products such as carbon monoxide (from morpholine) and nitrogen oxide (from sodium nitrite).

Service Tunnels

Welding, metal cutting, brazing or soldering operations conducted in service tunnels may create hazardous conditions due to the presence of metal fumes, welding gases and oxygen consumption. The sudden release of steam can produce burns and displace air, creating an asphyxiating atmosphere.

Specific Procedures

In addition to the general procedures presented in the main body of this chapter, the following specific procedures shall be adopted:

- √ placards will be posted by or on the manhole of steam boilers and service tunnels identifying these spaces as permit required confined spaces.
- √ Boilers will be cleaned thoroughly to remove chemical residues before entry.
- √ Valves of feeding pipes to boilers will remain locked and tagged in the close position during entry.
- √ Pressure of steam pipes will be relieved before repair work takes place. The segment of the pipe under repair will remain isolated by closing adjacent valves (valves will be locked and tagged).

√ The atmosphere within the space will be tested periodically to ensure that oxygen levels, flammable concentration and carbon monoxide levels are acceptable.

√ Welding operations in confined space will require a special permit (hot work permit) and one of the following control options:

- dilution ventilation (2,000 cfm per welder),
- local exhaust ventilation,
- supply air respirators.

When contractors perform work in UNA PRCS, the supervisor shall:

√ Inform the contractor that the space is a PRCS and that the entry to this space must comply with 29 CFR 1910.146.

√ Provide the contractor with a list of hazards of the PRCS and the precautions that must be taken for a safe entry.

THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Program Statement

The University of North Alabama will take measures to insure that employees are aware of the dangers associated with stored energy and will provide procedures for identifying potential energy sources and the means by which the equipment should be deenergized in order to prevent injury to employees.

Program Objective

The purpose of this program is to protect the operator who provides maintenance or service from unexpected equipment energization or release of stored energy.

Scope and Application

This procedure applies to the control of energy while machines are being serviced or repaired. It does not apply to the following:

Work on cord and plug equipment in which energizing is totally controlled by unplugging of the equipment and when the cord and plug are under the exclusive control of the person providing the service.

Energy Control Procedures

Supervisors should identify equipment that may expose University's personnel to hazardous energy sources during maintenance. Specific procedures for energy control should be designed for the identified equipment.

Energy Sources

Hazardous energy sources that may require control are:

Electrical Energy
Pneumatic pressure
Hydraulic pressure
Vacuum lines
High or low temperature
Reactive chemicals
Springs or other resilient elements under stress
Radioactive sources
Non-ionizing radiation such as lasers, infrared radiation, ultra violet radiation, ultra sound. Vibration, noise, etc.

Lockout-tagout and any other energy control procedures shall be applied by authorized personnel only. Authorization must be obtained from the area supervisor before any service or maintenance work begins.

Affected employees should be notified of the ongoing procedures.

The following steps can be followed to develop specific energy control procedures:

Preparation for shutdown

Before turning the equipment off, familiarize with manufacturer's instructions for equipment shutdown. Know all the energy sources involved, their hazards, and the control procedures that should be applied.

Ensure that all the devices you need for energy control are readily available at the work area.

Notify all affected employees of equipment shut down and that all applied energy control devices should not be removed.

Machine or equipment shutdown

Follow standard procedures for shut down. Keep personnel not involved in maintenance or service away from the area.

Machine or equipment isolation

Apply all isolating devices needed for energy control. When using locks, tags shall be affixed at the same point of application. Lockout devices shall keep the isolating device in the "safe" or "off" position. Incoming pipes with hazardous materials or fluids at high temperature or pressure shall be isolated by using blind flanges, double block and bleed methods or any other equally effective procedure.

Stored energy relief

All residual energy shall be eliminated or rendered safe. If there is a chance for energy buildup, this source shall be eliminated by isolation or continuous discharge. Eliminate hydraulic or pneumatic pressure. Use bonding and grounding to eliminate static electricity. Discharge any residual electrical charge from condensers and capacitors. Block sources with stored mechanical energy such as compressed springs or elevated platforms to prevent unexpected movement.

Verification of isolation

After a machine has been isolated, locks-tags have been applied, and stored energy has been relieved, verify isolation and de-energizing by turning the machine on.

Release from Lockout Tagout

Before locks, tags and other isolating devices are removed, the following steps shall be taken:

Ensure that equipment components are operationally intact, and all removed items have been properly returned.

Check that employees are standing at safe distances from the equipment in case it fails during its return to operation.

Lockout, tagout and any other isolating devices shall be removed by the employee who installed them. If for well-established and known reasons this employee is not available, then a designated employee under the direct supervision of the supervisor may remove them. Standard procedures according to the energy control program must be followed.

Additional requirements:

If a locks and tags are temporarily removed for equipment testing or positioning, the following measures should be considered:

Clear all tools away from the machine or piece of equipment.

Remove employees from the area around the machine.

Remove the lock or tag.

Energize the machine and begin testing.

De-energize all systems and then re-apply all energy control measures.

Outside or Contract Personnel:

Outside personnel should be advised of the hazardous energy sources involved in their work and be requested to have their own control procedures.

General Requirements For The Selection Of Energy Control Devices:

The following devices can be used for energy control: locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware.

Lockout and tagout devices cannot be used for any other purposes than energy isolation and control.

They should be durable and able to stand up to environmental conditions of exposure. Tags should be replaced when they become illegible.

The lockout and tagout devices should be standardized in at least one of the following aspects: color; shape; or size. Tag format should also be standardized.

Lockout and tagout devices should not be removed when applying an unlocking strength of less than fifty pounds.

Tagout devices should identify the person who applied it. They should also have a warning message preventing their removal or equipment energizing.

Periodic Inspections:

The responsible supervisor must conduct inspections at least once every year to make sure that the energy control procedures are being followed and effectively protect personnel from hazardous energy sources.

Training And Communication:

Training is required to ensure that personnel understand the energy control program, and the prescribed standard operating procedures.

Training activities should be documented, including content of the training, personnel's names and dates of training.

Retraining should be provided whenever there is a change in job assignments, or standard procedures. It should also be provided when new hazards are present or when a deficiency in following standard procedures is noticed.

WALKING AND WORKING SURFACES

Program Statement

Walking and working surfaces will be designed and maintained to minimize the risk of falls and impact by stationary or moving objects.

Objectives

The objectives of this chapter are to ensure that:

- walking and working surfaces are maintained unobstructed and free of recognized fall and impact hazards,
- temporary hazardous conditions of walkways and working surfaces are brought to the attention of users,
- fall protection systems are provided for work at high locations,
- the design and use of temporary elevated platforms comply with Federal and State regulations,
- UNA employees are able to recognize fall hazards and adopt proper preventive measures.

General Procedures

All permanent walking and working areas will be maintained clean, orderly, and in sanitary condition.

All floors will be kept free of protruding objects.

Aisles and passageways will be unobstructed and appropriately marked with yellow lines whenever these lines are considered necessary to facilitate circulation and protect users.

Signs will be posted to warn UNA employees and general public about temporary hazardous conditions such as wet and slippery floors, uneven or damaged flooring surfaces, the presence of unusual objects, wall and floor openings and holes, and falling objects. Access to areas with hazardous conditions will be restricted by using barrier tape, guards, or fences.

Guardrails and covers

The following locations will be guarded with standard or equivalent railing:

See OSHA's definition of a standard railing in Appendix A of this chapter.

√ each open side of a floor platform located 4 feet or more above the adjacent floor level

√ work areas adjacent to dangerous equipment (regardless of their height)

√ stairway floor openings (except the entrance to the stairway)

√ flight of stairs with four or more risers. In this case, the number of handrails will be determined by the width of the stairway according to the following rule:

stairways less than 44 inches wide, at least one handrail for enclosed stairs (on the right-hand side descending), and two handrails for open stairs.

Stairways between 44 and less than 88 inches wide, two handrails.

Stairways equal or wider than 88 inches, three handrails (one central and two lateral).

Every manhole or similar floor opening will be guarded by a proper cover. If this cover is removed, the opening will be protected by a temporary guardrail or warning system.

Portable Ladders

Ladders will be in good condition and of proper length and type for the use intended.

For acceptable lengths and types of ladders, see Appendix B of this chapter.

Ladders will be inspected frequently by the user and those with defects will be withdrawn from service for repair or destruction.

For an example of a ladder inspection checklist, see Appendix C of this chapter.

Damaged ladders will be tagged or marked with the following legend:

"Dangerous, Do Not Use"

The ladder inspection will consider all ladder components, with emphasis on those parts that are more susceptible to damage. At a minimum, inspection will verify that:

- √ joint between the steps and side rails are tight
- √ all hardware and fittings are securely attached
- √ all movable parts operate freely without binding or undue play
- √ rope is not worn out or frayed
- √ safety feet are in good condition
- √ rungs and steps are free of grease and oil
- √ wood parts are free from sharp edges, splinters, shake, wane, decay, and other irregularities.

When using portable ladders the following safe practices will be adopted:

- √ portable rung and cleat ladders will be positioned at a pitch that prevents slippage and tipping

See diagram of the ladder preferred pitch on Appendix D of this chapter.

- √ extension ladders will be tied in place or have lateral outriggers to prevent side slip
- √ tops of self-supporting ladders will not be used as steps
- √ when climbing a ladder, the three-point contact principle will be followed (two hands and a foot or two feet and a hand)
- √ when climbing a ladder, tools will be carried in a tool belt or raised with a hand line attached to the top of the ladder
- √ ladders will not be tied or fastened together to provide longer sections unless specifically designed for such purpose
- √ when used to gain access to elevated platforms or roof, the ladder will extend at least three feet beyond the top edge of support
- √ ladders will be capable of supporting an actual load of at least four time the maximum intended load
- √ ladders will not be placed on boxes, barrels, or other unstable bases to obtain additional height
- √ ladders will not be placed in front of doors, unless the door is blocked upon, locked, or guarded
- √ ladders used near electrical equipment will be made of electrically non-conductive materials

All portable metal ladders will be marked with a sign that reads: “***CAUTION—Do Not Use Around Electrical Equipment.”***

Scaffolds

All scaffolds and any other work access platforms used in the UNA campus will comply with the requirements set forth by OSHA in 29 CFR 1926.450 – 454.

The following is a summary list of general requirements concerning scaffolding:

Capacity

- √ scaffolds and their components will be capable of supporting at least four times the maximum intended load without failure
- √ suspension rope used on non-adjustable suspension scaffolds must be capable of supporting at least 6 times the maximum intended load applied or transmitted to the rope.

Construction and use

- √ no scaffold may be erected, moved, dismantled, altered, unless approved and supervised by a qualified and competent person
- √ footing will be level, sound, rigid, and capable of supporting the load. Unstable objects (barrels, loose bricks or concrete blocks) will not be used to support scaffolds or planks
- √ supported scaffolds with a height to base width ratio of more than four to one will be restrained from tipping
- √ working platforms will have a safe means of access consisting of portable ladders, hook-on ladders, stairway-type ladders, ramps, or walkways
- √ suspension ropes will be shielded from heat-producing processes, or treated to protect against corrosion when corrosive substances such as acids are used on the scaffold
- √ slippery conditions will be eliminated
- √ each working platform will be at least 18 inches wide, fully planked or decked, and positioned with its front edge close to the face of work (less than 14 inches) (exceptions apply)
- √ vertical lifelines will be independent of the scaffold, and protected from sharp edges and abrasion
- √ the area below the scaffold will be barricaded to restrict access and protect workers and public from falling objects
- √ a toeboard (4 inches of height) will be placed along the edge of the platform when there is a potential for falling objects
- √ when loose materials are expected to pile up above the height of the toeboard, a wire screen (No. 18 gauge U.S. Standard ½-inch mesh) covering all open areas between the toe board and the guardrail of the scaffold will be added.

Fall protection in scaffolds

- √ fall protection will be provided for each employee working on a scaffold 6 feet or more above a lower level
- √ the type of fall protection provided will be as follow:
  - personal fall arrest systems for suspension scaffolds;
  - personal fall arrest systems and guardrails for self-contained adjustable scaffolds when the platform is supported by ropes;
  - personal fall arrest systems or guardrails for supported scaffolds.

Fall Protection

The following activities require fall protection

Any work activity conducted on a location with an unprotected side or edge 6 feet or more above a lower level. Locations include working platforms, ramps, runways, floor holes (including skylights), edge of excavations, wells, pits, shafts, roofs and wall openings.

Any location regardless of height, above dangerous equipment.

Fall protection systems

General methods of fall protection include guardrails, safety nets, and personal fall arrest systems.

Specific methods of fall protection include:

- √ covers for floor holes
- √ positioning device systems for steel erection
- √ fences or barricade for excavations
- √ warning line in combination with guardrails, safety nets, personal fall arrest or safety monitoring for roofing work.

See Appendix E of this chapter for a description of some of these systems.

Training

Each employee exposed to fall hazards will be trained on hazard recognition and their means of protection.

The training program will include the following topics:

- √ the nature of the fall hazards
- √ procedures for safe and proper use of fall protection systems
- √ the role of each employee in safety monitoring system (if this system is used)

- √ procedures for safe handling and storage of fall protection equipment
- √ the content of the fall protection standard.

Retraining will be offered when any of the following conditions occur:

- √ changes in the workplace make the previous training obsolete
- √ different fall protection systems are adopted
- √ inadequacies in employee knowledge and performance are detected.

APPENDIX A

GUARDRAIL SYSTEMS

Standard guardrails 29 CFR 1910.23 (e).

A standard railing consists of top rail, mid rail, and posts. The characteristics of this system are:

- √ a vertical height of 42 inches measured from the top of rail to floor
- √ mid-rails installed approximately halfway between the top rail and the floor
- √ a guardrail designed to withstand a force of at least 200 pounds, applied within 2 inches of the top edge, in any direction, without failure
- √ the surface of the top rail smooth and continuous to prevent punctures, lacerations, or snagging of clothing
- √ for pipe railings, posts and top and intermediate railings of at least 1.5 inches nominal diameter with posts spaced not more than 8 feet on centers
- √ for structural steel railings, posts and top and intermediate rails of at least 2-inch by 2 inch with posts spaced not more than 8 feet on centers.

Stair railing

A stair railing is similar to a standard railing but the vertical height will be not more than 34 inches and no less than 30 inches, measured from the top of the rail to the upper surface of tread in line with face of the riser.

APPENDIX B
ACCEPTABLE LENGTH AND TYPES OF LADDERS

Portable wood ladders

Self supporting stepladders will:

- √ not be longer than 20 feet
- √ have uniform step spacing, which will be no more than 12 inches
- √ have a metal spreader or locking device to securely hold the front and back sections in open position.

Single ladders (non-self-supporting portable ladder) will:

- √ not be longer than 30 feet
- √ not be longer than 60 feet for two section extension ladders
- √ have a secure footing.

Portable metal ladders

Rungs and steps shall be fabricated or treated to minimize the possibility of slipping.

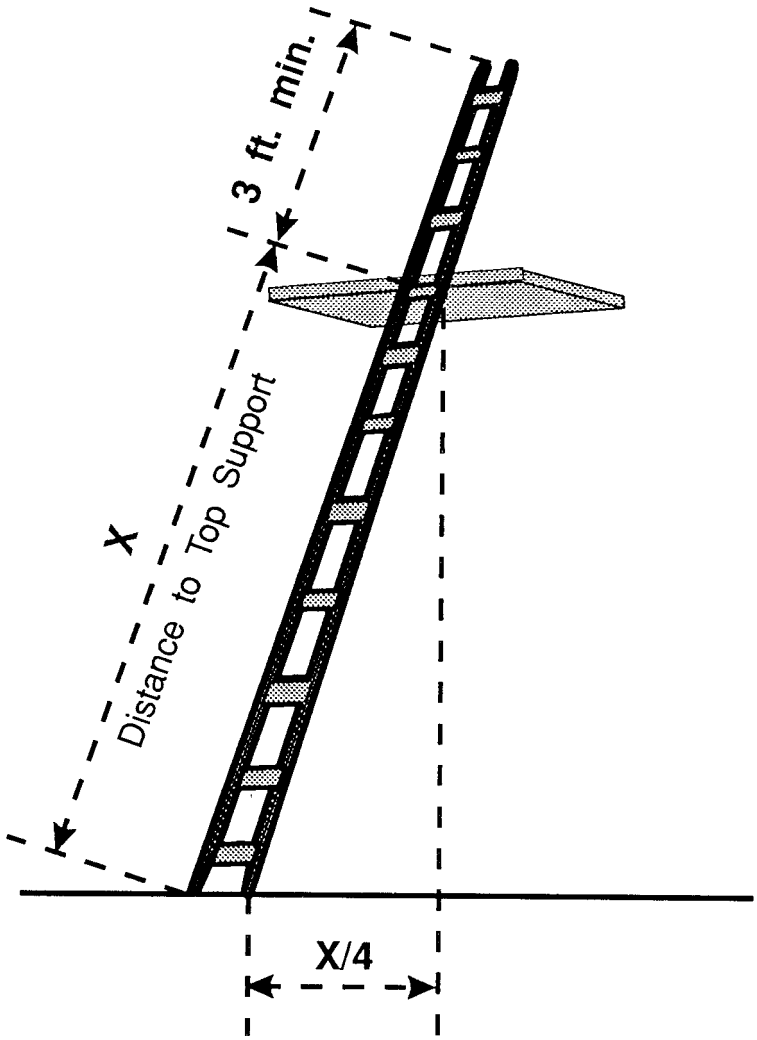
Self supporting stepladders will:

- √ not be longer than 20 feet
- √ have the bottom of the four rails treated with a non-slip material.

Single ladders (non-self supporting, portable ladder) will:

- √ not have individual sections exceeding 30 feet
- √ not be longer than 48 feet (two section ladders)
- √ not be longer than 60 feet (three section ladders).

APPENDIX C
LADDER POSITIONING



APPENDIX D
LADDER INSPECTION CHECKLIST

General

Item to be Checked	Needs Repair	Condition Acceptable
Loose steps or rungs (considered loose if they can be moved at all with hands)		
Loose nails, screws, bolts, or other metal parts		
Cracked, split, or broken uprights, braces, steps, or rungs		
Slivers on uprights, rungs or steps		
Damaged or worn nonslip bases		

Stepladders

Item to be Checked	Needs Repair	Condition Acceptable
Wobbly (from side strain)		
Stop on hinge spreader broken		
Loose or bent hinge spreaders		
Broken, split, or worn steps		
Loose hinges		

Extension ladders

Item to be Checked	Needs Repair	Condition Acceptable
Loose, broken, or missing extension locks		
Defective locks that do not seat properly when the ladder is extended		
Deterioration of rope, from exposure to destructive agents		

Trestle ladders

Item to be Checked	Needs Repair	Condition Acceptable

Loose hinges		
Wobbly		
Loose or bent hinge spreaders		
Stop on hinge spreader broken		
Center section guide for extension out of alignment		
Defective locks for extension		

Sectional ladders

Item to be Checked	Needs Repair	Condition Acceptable
Worn or loose metal parts		
Wobbly		

Source: Accident Prevention Manual for Industrial Operations. National Safety Council, 1977.

APPENDIX E
FALL PROTECTION SYSTEMS

Personal Fall Arrest Systems

Personal fall arrest systems will comply with 29 CFR 1926.502 (d). The main characteristics and conditions of use are listed below:

- √ only body harnesses acceptable for personal fall protection systems
- √ connectors, D-rings, snap-hooks, lifelines and lanyards in compliance with 29 CFR1926.502 (d)(1)-(9).
- √ each employee attached to a separate vertical lifeline
- √ ropes and straps used in lanyards, lifelines, and body harnesses made of synthetic fibers
- √ anchorage of lifeline attachments independent of support devices used to suspend platforms and other working surfaces
- √ units limiting arrest force to less than 1800 pounds and travel distance to less than 6 feet
- √ when subjected to impact, fall arrest system removed from service and not used until an inspection by a competent person assures that are safe for re-use.

Safety Net Systems

Safety net systems used for fall protection will comply with 29 CFR 1926.502 (c). The main characteristics and conditions of use are listed below:

- √ safety nets installed as close as practicable to the working/walking surface, with a limit distance of 30 feet
- √ surface area of net exceeding working platform area by a length of an edge that is a function of the vertical distance between these two components (see Table 29 CFR 1926.502 (c)(2))

- √ nets able to absorb a force specified by a drop test (29 CFR 1926.502 (c)(4) gives the test protocol). The drop test will be applied following initial installation, net relocation, major net repair, and at 6 months intervals if the net is left in place for extended periods of time.

Warning Line Systems

Warning line systems will comply with 29 CFR 1926.502 (f). The main characteristics and conditions of use of these systems are given below:

- √ warning systems used for roof work if other fall protection systems are not possible
- √ warning systems used in combination with some other fall protection method
- √ A warning line established around all sides of the roof work area
- √ warning line maintained closed (by using ropes, wires, or chains) at all times, except for access paths, which will be opened only to allow the entrance of people and materials to the working area.

Safety Monitoring Systems

Safety monitoring systems will comply with 29 CFR 1926.251 (h). The main characteristics and conditions of use of these systems are given below.

A person will be designated for safety monitoring. This person will:

- √ be able to recognize fall hazards
- √ warn others when he/she detects unsafe actions
- √ stay in the work area during operations
- √ not have other responsibilities besides monitoring.

Only employees engaged in roofing work and covered by a fall protection plan will be allowed in the working area.

APPENDIX F

Glossary of Terms (Fall Protection)

Deceleration device	Any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyards, or automatic self-retracting lifelines which serves to dissipate a substantial amount of energy during a fall arrest.
Lanyard	A flexible line of rope, wire rope, or strap with a connector at each end for connecting the body-harness to a deceleration device, lifeline, or anchorage.
Lifeline	A vertical or horizontal flexible line used for connecting the personal fall arrest system to the anchorage.
Leading edge	The edge of a floor, roof, or formwork for floor or other walking/working surface which changes location as the work progresses.
Low-slope roof	A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
Personal fall arrest	A system used to arrest an employee in a fall. It consists of an anchorage, connectors, a body-harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
Safety monitoring	A system by which a competent person is responsible for recognizing and warning employees of fall hazards.
Steep roof	A roof having a slope greater than 4 in 12 (vertical to horizontal).
Warning line system	A barrier erected on a roof to warn employees that are approaching an unprotected roof side or edge.
Positioning device	A body-harness system rigged to allow an employee to be supported on an elevated vertical surface, and work with both hands free while leaning.