

# **Emergency Procedure Manual**

**Central Michigan University**

**Powers Hall**

**Updated: July 1998**

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## **I. INTRODUCTION**

### **A. PURPOSE**

It is the intent of this manual to serve as a guideline for **employee, student and visitor** actions in the event of an emergency. Emergencies can happen without warning, at any time or any place. It is because of this reason that employees, students and visitors must familiarize themselves with the following procedures contained within this manual. By becoming familiar themselves with these procedures, one can help to minimize the dangers associated with an emergency situation. This manual provides information regarding procedures during emergencies such as:

- Accidents or Injuries
- Bomb Threats
- Chemical Releases
- Disturbances and Violent Behavior
- Fires
- Power Outages
- Tornadoes

The following procedures will be applicable for all evacuations called for under the specific situations of this Plan.

### **B. LEGAL COMPLIANCE**

This plan shall comply with the following Federal and State regulations:

- ❑ 29 CFR 1910.36 Means of Egress
- ❑ 29 CFR 1910.38(a) Employee Emergency Plans and Fire Prevention Plans
- ❑ 29 CFR 1910.165 Employee Alarm Systems
- ❑ Michigan Occupational Safety and Health Administration (MIOSHA) Standards for General Industry.

### **C. AUTHORITY STATEMENT**

The administration of Central Michigan University (CMU) recognizes that during emergency situations special procedures must be followed to control and mitigate an emergency. Therefore, the Administration, by acceptance of this Emergency Action Plan (EAP), grants authority to those responsible individuals and/or positions named in these procedures to implement and carry out the Plan to the termination of the emergency situation.

The Administration also recognizes that those individuals authorized to respond to emergency situations shall be properly trained in those procedures and emergency techniques such as: evacuation, first aid, use of fire extinguishers, and other areas as determined by their duties and responsibilities.

#### **D. PLAN DISTRIBUTION**

This emergency action plan shall be distributed to key individuals listed in this plan, with a master copy being maintained by Jon Kujat (Environmental & Safety Services Coordinator), located in Rowe 118. The plan shall be available for review by all employees, students and visitors.

The following is a list of the locations of this EAP as distributed to areas of the campus:

<u>Department</u>	<u>Location</u>
Environmental & Safety Services	Rowe 118
CMU Police	Dispatch Office
Building Coordinator	Combined Services Building Room 208

#### **E. EMERGENCY PHONE NUMBERS**

CMU Police	911
Facilities Management Service Center	774-6547

#### **F. 911 PROCEDURE**

Use the following statement to provide the necessary information to the 911 dispatcher:

This is \_\_\_\_\_ calling from Powers Hall.  
(Caller's name)

There has been an incident which requires emergency service. The phone number here is \_\_\_\_\_. (Do not hang up until 911 dispatcher says you may). The situation is \_\_\_\_\_ (briefly explain the situation, i.e., fire, injured person, etc.).

#### **G. MANAGEMENT RESPONSIBILITY**

The Administration of Central Michigan University has the responsibility to ensure a safe environment for its employees, students and visitors to the University. As part of this responsibility, each supervisor has a responsibility to ensure that all personnel are evacuated in a timely and safe manner from the facility and to ensure that all personnel are accounted for following evacuation. The following will outline the responsibility of each level of management during an evacuation:

### **Powers Hall Emergency Coordinator(s)**

- a) Shall ensure that the Powers Hall staff personnel are trained in proper evacuation methods through Powers Hall safety training and evacuation drills.
- b) Ensure that alarms are sounded in a timely manner when an emergency situation is encountered.
- c) Determine that all personnel on-site have been accounted for following an evacuation.
- d) Report status of evacuation to the Fire Department upon their arrival.

### **Supervisors**

- a) Ensure that they are familiar with the requirements of the Plan and their responsibilities during an evacuation of their assigned area(s).
- b) Ensure that personnel assigned to their area(s) are trained in the requirements of the Plan as it relates to them and procedures to follow during an evacuation.
- c) Determine any special evacuation needs or assistance that personnel within their assigned area(s) may have.
- d) Account for all personnel assigned to their areas following an evacuation and report this information to the Powers Hall Emergency Coordinator(s).

### **Employees / Students / Visitors**

- a) Be familiar with their responsibilities during an evacuation of their assigned work area(s).
- b) Assist their department supervisors as needed in the evacuation of other students/employees and visitors to a safe area.

## **H. TRAINING**

As stated previously, all training will be conducted annually. People shall receive training concerning the emergency action plan to the level of their expected involvement.

Students and employees will receive training during their initial orientation and refresher training annually. The training shall include what responsibilities and actions are required by the plan for their area. All students and employees shall be trained whenever the plan is revised.

To ensure that the plan will meet the conditions at CMU and that all involved individuals will respond properly, the EAP will be tested on a regular basis. All drills and exercises of the EAP will be documented indicating the results of the exercise and any problems that were encountered.

## **I. APPLICABLE INFORMATION**

### **Building Information**

Powers Hall was established in 1939 with renovations or remodeling occurring in 1960. It is constructed of concrete, steel, block and glass with a brick exterior. It encompasses a total of 44,341 ft<sup>2</sup>. Powers Hall was home to the music department but now sits vacant. Powers Hall is also attached to Barnes Residence Hall.

### **Description of the Surrounding Area**

To the North: Parking Lot #6 & Ronan Hall

To the West: Washington Street, Wightman Hall and Robinson Residence Hall

To the South: Barnes Residence Hall & the Bovee University Center

To the East: Warriner Hall

The most logical place for individuals to meet following an emergency of large scale (fire, bomb threat, etc.) is to the upwind side of the building, a minimum of 250 feet from the building. Parking Lot #6 to the north of Powers Hall may be applicable in this situation.

## **II. INJURIES / ACCIDENTS IN THE FACILITY**

### **A. Procedures to assist victim(s)**

Injuries are sometimes a part of work. Though usually not serious in nature, there is the possibility, so preparation for a serious injury incident is very important. The following procedure is to be used when a person has an accident / injury.

- ◆ Stop all activity around the injured person so as to prevent further injury.
- ◆ Assess the situation. If the injury appears serious, call 911.
- ◆ Do not move the injured person(s) unless they are in immediate danger, (fire, etc.).
- ◆ Do not attempt to treat the injury unless it is necessary to ensure the health and well being of the injured person(s), **AND YOU HAVE RECEIVED THE PROPER MEDICAL TRAINING**, (severe bleeding, etc.) being sure to protect yourself from a possible exposure to Bloodborne Pathogens through the use of personal protective equipment (latex gloves, etc.).
- ◆ The floor plans in Section XIII of this document show the locations of the emergency intercoms and call boxes (If applicable).

### **III. BOMB THREATS**

#### **A. Procedures when receiving a threat by telephone**

Bomb threats are generally a hoax which are made in an effort to disrupt normal business operations. However, **NO** bomb threat should be treated as a hoax. The following procedure is to be used if you are the recipient of a bomb threat over the telephone.

- ◆ DO NOT HANG UP!
- ◆ Remain as calm as possible.
- ◆ Ask the caller if you can transfer them to the CMU Police (911).
- ◆ If they do not wish to be transferred, refer to the Bomb Threat Checklist on the following page.
- ◆ Be kind and courteous to the caller and note all information you are given as best as possible. Attempt to keep the caller on the line as long as possible.
- ◆ If possible, gain the attention of a co-worker and have them notify the CMU Police (911) of the incoming bomb threat. This can be done through the use of writing or gestures. Do not allow the caller to know that CMU Police are being informed while you speak.
- ◆ The CMU Police will decide if evacuation procedures are necessary and will initiate such procedures. Refer to Section VI.A. Evacuation Procedures.

## B. Bombthreat Checklist

Exact time of call \_\_\_\_\_

Exact words of caller \_\_\_\_\_

### QUESTIONS TO ASK

1. When is bomb going to explode? \_\_\_\_\_
2. Where is the bomb? \_\_\_\_\_
3. What does it look like? \_\_\_\_\_
4. What kind of bomb is it? \_\_\_\_\_
5. What will cause it to explode? \_\_\_\_\_
6. Did you place the bomb? \_\_\_\_\_
7. Why? \_\_\_\_\_
8. Where are you calling from? \_\_\_\_\_
9. What is your address? \_\_\_\_\_
10. What is your name? \_\_\_\_\_

CALLER=S VOICE (circle):

<b>Calm</b>	<b>Disguised</b>	<b>Nasal</b>	<b>Angry</b>	<b>Broken</b>
<b>Stutter</b>	<b>Slow</b>	<b>Sincere</b>	<b>Lisp</b>	<b>Rapid</b>
<b>Giggling</b>	<b>Deep</b>	<b>Crying</b>	<b>Squeaky</b>	<b>Excited</b>
<b>Stressed</b>	<b>Accent</b>	<b>Loud</b>	<b>Slurred</b>	<b>Normal</b>
<b>Male</b>	<b>Female</b>			

If voice is familiar, whom did it sound like? \_\_\_\_\_

Were there any background noises? \_\_\_\_\_

Person receiving call: \_\_\_\_\_

Telephone number call received at: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

### C. Typical characteristics of a mail or package bomb

The likelihood of receiving a bomb in the mail is extremely remote. Unfortunately, however, there have been a number of explosive devices mailed over the years which makes it a threat to be considered. Keep in mind that a bomb can be enclosed in a package or envelope and its appearance is limited only by the imagination of the sender. However, mail bombs have some unique characteristics which may help you in identifying a suspect mailing. It is important to know the type of mail typically received by your facility when applying the following characteristics.

- ◆ Feel and Balance – Letters that feel rigid, appear uneven or lopsided, or are bulkier than normal. Is there any springiness or undue pressure that can be felt through the package. Contents of a parcel make a sloshing sound.  
**WARNING – EXAMINE MAIL GENTLY!**
- ◆ Foreign Packages – If the item(s) is from another country, ask yourself if it's expected.
- ◆ Place of Origin – Is it a familiar one? Note the delivery postmark.
- ◆ Unrequested deliveries – Is correspondence from the sender expected? Do the characteristics of the envelope or package resemble the expected contents? The addressee normally doesn't receive personal mail at the office.
- ◆ Unusual addressing or delivery instructions – There are unusually restrictive endorsements such as "Personal" or "Private." Unprofessionally wrapped parcel is endorsed "Fragile Handle with Care" or "Rush – Do Not Delay." Name and title of addressee are not accurate. The sender is unknown. There is no return address.
- ◆ Smell – Mailing emits a peculiar odor. There is a smell of marzipan (the smell of almonds) or any other strange smell coming from the package or letter.
- ◆ Sender's Writing – Any mail should be treated with caution if it features a foreign style of writing, not normally received, on the address. This goes along with the place of origin.
- ◆ Protruding wires – Are there any protruding wires, tinfoil, or strings present.
- ◆ Sound – If there's any unusual sound or noise coming from the package, such as a buzzing or ticking noise, the package should be treated with caution.

If the package or letter exhibits any of these warning signs or characteristics, follow the procedures found in the following Section III.D.

#### **D. Procedures when a suspicious article is received by mail.**

If a suspicious package or letter arrives through the mail or by any other means the following procedures should be followed.

##### If the letter or package has not been touched

- ◆ Do not touch it! Do not allow anyone else to touch it.
- ◆ Evacuate the room and surrounding rooms immediately. Leave windows and doors open. Keep others out of the area.
- ◆ Call CMU Police (911) and explain that there is a possible bomb that has just been received. Give the location of the package or letter and when and how it arrived as well as any other information that they request. Do not place the call in the same room as the package or letter.
- ◆ Do not handle the package or letter, or attempt to take it outside.
- ◆ Do not place the package or letter in water.
- ◆ Follow any instructions that are given by the CMU Police.

##### If a package or letter is suspected during handling

- ◆ Place the suspicious package or letter in a corner of the room, handling it very gently and making sure not to turn it over or unbalance it.
- ◆ Make sure the device is placed away from window, and that the windows are open.
- ◆ Evacuate the room and surrounding rooms, leave windows and doors open. Keep others out of the area.
- ◆ Call CMU Police (911) and explain that there is a possible bomb that has just been received. Give the location of the package or letter and when and how it arrived as well as any other information that they request. Do not place the call in the same room as the package or letter.
- ◆ Do not attempt to take the package or letter outside.
- ◆ Follow any instructions that are given by CMU Police.

## **E. Finding an actual explosive device**

As with a package or letter bomb, a bomb which has been placed in or around the facility may not have the outward appearance of a bomb. A bomb placed by an individual is normally placed in an inconspicuous location and is generally followed by a telephone threat, though not in all cases. A bomb that has been placed can have any or all of the characteristics of a package or letter bomb. If you notice a suspicious object in an area that it does not belong, or has never been before, use the following procedure.

- ◆ **DO NOT TOUCH THE OBJECT!**
- ◆ **Do not use radio transmission to inform others.**
- ◆ **Do not pull the fire alarm**
- ◆ **Do not use the public address system.**
- ◆ **Exit the area cautiously and quickly.**
- ◆ **Call CMU Police (911) and inform them that there is a possible bomb in the facility. Provide any information about the object that you have. Follow any instructions given by the CMU Police.**

#### IV. SEVERE WEATHER (TORNADOES)

##### A. Tornado/Severe Weather Information/Instructions

**Tornado WATCH:** Conditions are favorable for a tornado to develop.

**Do This:** Tune your radio to the local radio stations for up-to-date weather information.

**Tornado WARNING:** Tornado has been seen in the area.

**Signal:** Weather Warnings issued VIA Isabella County Emergency Management, sirens from Anspach Hall will sound.

##### Tornado Danger Signs

<i>Bad Thunderstorms</i>	thunder, lightning, hard rain, strong winds
<i>Hail</i>	bullets of ice from a dark, cloudy sky
<i>Roaring noise</i>	like ten jet planes or a hundred railroad trains
<i>Funnel</i>	a dark spinning “rope” or column from the sky to the ground

Telephone Alert Procedures (in order) in the event of a Tornado **WATCH**.

1. The CMU Police Department may notify the Building Coordinator’s office with the following message.

“This is to advise you that a **TORNADO WATCH** is in effect from now until \_\_\_\_\_. Please follow the procedures assigned to your building / department.”

2. The Building Coordinators office will then contact the various employees in Powers Hall and inform them of the **Watch**.

##### OFFICE – SPECIAL INSTRUCTIONS

1. Post **TORNADO WATCH** signs in the hallway so they are conspicuous to visitors and others who might not be present at the time of the calls from CMU Police.

##### SPECIAL INSTRUCTIONS

1. Tune radios to local radio stations for weather information.
2. Remove Tornado kit from file and insert date and time in bold letters on posters (**WATCH** posters only).

3. If the **WATCH** is extended, be sure to have someone change the time on the posters.
4. Make sure the **WATCH** posters are removed at the end of the **WATCH** period.

### **LOCATION OF TORNADO SHELTER AREAS**

The tornado shelters for Powers Hall can be found in Section XIII, A – Floor Plans.

### **TORNADO WARNING INSTRUCTIONS**

#### **Offices**

1. Secure the office and proceed to shelter areas immediately.

#### **B. Shelter Procedures**

In the event that a Tornado Warning is issued, the following list describes where each area is to seek shelter. Generally, there is 3 minutes after a warning is issued before a tornado hits, so it is very important to be able to guide occupants to their specific shelter area as quickly and efficiently as possible.

- ◆ All occupants of Powers Hall should proceed to the following areas:

**First Floor:** Rooms 158 (men's restroom), hallway 142, 145 and 150C.

**Second Floor:** Hallways 261 and 252.

- ◆ It may not be possible to move all occupants into this area so it is necessary to be aware of specific things to **AVOID** if the shelter area cannot be reached. These include:
  - Wide expanse ceilings
  - Areas containing windows, display cases, or other glass
  - Large open areas
  - Areas with a large amount of debris

NOTE: If an area of proper protection cannot be reached, find the lowest point in the area and take cover under the most secure object you can find.

## V. FIRE

### A. Fire Prevention

The following will outline specific procedures that shall be addressed by the facility to minimize the occurrence and impact from a fire emergency. Special emphasis on housekeeping and storage procedures are practiced in the maintenance and custodial areas due to the fact that flammable and combustible materials are used and stored in these areas.

- (a) The University is committed to preventing the occurrence of fires and situations that may promote a fire at the University.
- (b) Fire prevention is the responsibility of all personnel. Employees and students should follow safe practices to minimize the hazard of fire, supervisors must ensure that safe practices are followed on a daily basis. Supervisors shall check their areas on a daily basis for fire prevention problems and report these problems promptly to the Emergency Coordinator for corrective actions.
- (c) All fire protection equipment will be inspected by the Emergency Coordinator or designee on a monthly basis. Results of inspection will be recorded on "Fire and Safety Equipment Monthly Inspection Form" (see Appendix B) and the results will be reviewed by the Business Division Safety Committee. Results of these inspections will be provided to the Environmental & Safety Services Coordinator.
  - 1) Equipment to be inspected will include:
    - Fire Extinguishers
    - Smoke detectors
    - Fire alarm system
    - Fire sprinkler system (if applicable)
    - Emergency lighting (if applicable)
    - Emergency generators (if applicable)
  - 2) Areas to be inspected will include:
    - Blocked or locked fire exits
    - Housekeeping procedures
    - Smoking in non-designated areas
    - Flammable/combustible materials not stored properly

## **POWERS HALL EMERGENCY COORDINATOR (S)**

Mel Remus

### **B. Procedures when a fire is found.**

In the event that a fire is spotted in the facility, it is extremely important to know the evacuation procedure (Section VI. A. Evacuation Procedures). It is also imperative that the following procedure be initiated immediately.

- Immediately trigger the fire alarm by using one of the wall pull stations. The locations of these stations is shown in Section XIII. A. Floor Plans.
- Call 911 and provide the location of the fire.
- **ONLY IF YOU HAVE BEEN TRAINED** – Attempt to extinguish the fire using an extinguisher only if it is a small fire, using the P.A.S.S. technique – Pull – Aim – Squeeze – Sweep.
- Confine fire by closing doors as you leave the area.
- Evacuate the facility using the evacuation procedure found in Section VI. A. Evacuation Procedure. It is the responsibility of faculty and staff to make certain all occupants are out of their immediate area. Advise the Mt. Pleasant Fire Department upon arrival if everyone is accounted for. Move as far away from the building as possible.

NOTE: The locations of Fire Extinguishers, Pull Stations and Exits can be found in Section XIII. A. Floor Plans.

## VI. EVACUATION PROCEDURES

### A. Procedures for evacuation of the facility

If evacuation is necessary, use the following procedure unless instructed otherwise by the CMU Police. Employees are responsible for maintaining calm and order as much as is possible for fast and efficient evacuation. Exit the building using the nearest stairs, if applicable, and the nearest door. Proceed to the meeting area in Parking Lot #6 located to the north of Powers Hall unless otherwise instructed. **DO NOT REENTER THE BUILDING UNTIL TOLD TO DO SO.**

NOTE: The floor plans found in Section XIII.A. show all the exits. Always move to a location that is upwind of the building. The wind in this area is predominantly from the west to southwest, therefore the primary meeting area should be on the North Side of Powers Hall in Parking Lot #6. If the wind is from another direction, go upwind away from the building to a location, which will not obstruct Emergency Personnel.

### B. Evacuation of Disabled Persons

Persons with disabilities have special needs and problems in the event of an emergency. It is very important to know how to address these problems and needs should a situation arise. The following procedures show how to address these needs for different disabilities.

#### Wheelchair Users

- If in an area of immediate danger, assist them in moving to a safer area immediately.
- If they are on a floor with an exit, stay with them until the crowd thins and then direct and/or assist them to the proper exit.
- If on a floor where an immediate exit is not present, assist them in moving to the nearest elevator, if applicable, (**elevators do not function if a fire alarm has been triggered**) or the nearest stairwell. Ask the person what is the best way for them to negotiate the stairs. If you are unable to assist the person to the top of the stairs, inform them that you must get help. Find the nearest Emergency Response person and inform them of the position of the disabled person.

### Visually Impaired Persons

- Explain to them the nature of the emergency.
- Guide them to the proper exit. If a guide dog is present it should not interfere with your attempt to assist.
- If climbing or descending a stairwell is necessary, do so after the crowd has thinned.
- Guide them to a safe area outside the building, orient them as to where they are, and provide any further assistance that is necessary.

### Hearing Impaired Persons

- A person with impaired hearing may not be aware of an emergency, therefore an alternate warning technique may be needed, such as writing a note or speaking slowly to allow them to read lips or the use of gestures.
- As quickly as is possible, inform them what is happening and direct them to the proper exit. Provide any additional assistance that may be necessary.

## **VII. POWER OUTAGES**

### **A. Procedure when a power failure occurs**

Power failures are a common occurrence and normally do not prove to be a hazardous situation. It is, however, important to be prepared should one occur. Darkness is often the result of a power failure and this can be a danger in a public facility. The following procedures are to be used during a power failure.

- If a power failure occurs during the day, vision should be satisfactory due to windows and doors providing outdoor light.
- If it is necessary to seek shelter during a power failure due to severe weather, employees are to go to the designated safe area or a protected area. Refer to Section IV.B. Severe Weather.
- When the power returns, inspect your area and report any damage which may have occurred (vandalism, electronics damage due to a surge, etc.).

**NOTE:** Be aware that with a power outage, you have no fire alarm system.

## **VIII. DISTURBANCES – VIOLENT / DANGEROUS BEHAVIOR**

### **A. Procedures for dealing with violent / dangerous behavior**

Due to the nature of the activities that take place at Central Michigan University, disturbances may occur when aggression overtakes rational judgement. An aggressive dispute can often be resolved with a few words from a person of authority. The following procedure is for disturbances which have escalated to be potentially dangerous to property or people.

- Use your best judgement when assessing the situation, determine whether it is something that can be resolved with intervention. NEVER put yourself into a situation that can become harmful to you.
- If the situation is dangerous, immediately call the CMU Police (911) and inform them of the location and actions of the individual(s) creating the disturbance.
- If a person(s) has or appears to have a weapon, immediately call the CMU Police (911).
- If a person(s) behavior appears to be drug or alcohol induced, immediately call CMU Police (911).
- If a person(s) has done or is doing malicious damage to property, immediately call CMU Police (911).
- If a person(s) is physically assaulting another, immediately call CMU Police (911).
- If you intervene and they refuse to cooperate, immediately call CMU Police (911).

## **IX. CHEMICAL RELEASES**

Chemical releases can be classified into two distinct categories:

### ➤ Incidental Releases

Incidental releases are small isolated releases of chemicals, such as cleaning solvents, that do not present or have the potential to cause injuries or require evacuation other than the immediate release area. Incidental releases can be cleaned up by personnel who have received proper training under the OSHA Hazard Communication Standard 29 CFR 1910.1200 and have the proper safety equipment, or by calling Environmental & Safety Services at 7398. This type of incident would not require the response of the Local Fire Department, or outside agency. However, Environmental & Safety Services should be notified of all releases. This will aid in the proper disposal of the released chemical.

### ➤ Emergency Releases

Emergency releases are those incidents that involve large quantities of chemicals and/or have the potential to cause injuries. A release that requires the response of the Emergency Response Team and/or local fire department would be considered an emergency release.

For the purpose of this Emergency Action Plan, only Emergency Releases will be addressed.

### **Employee Procedures for Chemical Releases**

1. Clear the area of all personnel and visitors – Instruct personnel to evacuate Powers Hall.
2. Dial 911 for CMU Police.
  - a) Advise nature of the problem.
  - b) Advise exact location of the chemical release.CMU Police will then contact Environmental & Safety Services.
3. If the situation appears to be a serious release, activate the fire alarm pull station and begin evacuation of the building.
4. Send one employee, if available, to meet Environmental & Safety Services and lead them to the incident area.
5. Advise Environmental & Safety Services on their arrival if all personnel are accounted for.

a) If an employee or visitor is missing, advise Environmental & Safety Services as to the last known location of the individual.

6. Provide assistance to Environmental & Safety Services as requested.

## **X. GAS LEAK**

The following general guidelines are recommended for the purpose of responding to a suspected or known gas leak:

1. Telephone Facilities Management Service Center (774-6547), and report the location and any unusual conditions. If Facilities Management Service Center is closed, telephone the CMU Police Department (911), which is open 24 hours a day, seven days a week.
2. If the gas leak is outdoors, stay upwind; keep out of low areas.
3. If the gas leak is indoors, leave the area. Do not turn on a light switch, or gas-burning appliances, or activate any other source that can produce a spark or open flame. Do not use a telephone in the immediate area. Where possible, ventilate the area by opening doors and windows.
4. The decision to evacuate an area or building will rest with the highest level of authority available at that time.
5. If the gas leak affects the whole building, or there is no easy way to shut it off in the area of the leak, shut off the main shut-off valve for the building. Each building has a main shut-off valve outside the building where the gas services enter. A notebook showing the locations of all building gas shut-off valves is located in the Facilities Management Service Center. The notebook is labeled "MichCon Gas Shut-Off Valves."

### **GENERAL INFORMATION FOR A GAS LEAK**

To provide a better understanding of the above recommended gas leak emergency action procedures, a brief description of the physical properties of Natural Gas and LP Gas Propane is provided. The University has equipment that uses both types of fuel. With one exception, the physical characteristics of both gases are very similar.

Natural Gas is an odorless fossil fuel that is lighter than air, while LP Gas-Propane is a by-product of crude petroleum and is heavier than air. Both fuels will burn and can explode under certain concentrations and proper air mixtures, and if a source of ignition is introduced. Both fuels are odorized by the chemical Mercaptan. The odor smells like garlic, rotten eggs or a skunk.

Without attempting to describe the concentrations, which have many variables, the most important factor is the source of ignition. Sources of ignition can be in numerous forms, such as a light switch, gas-burning appliance, telephone, electric

motor, cigarette lighter, automobile engine, or summarized as anything that can produce a spark or flame.

It should be noted that all gas-burning appliances are required by ANSI Standard 21-30 to have an appliance gas shutoff valve to enable the fuel source to be interrupted at the appliance.

## **XI. EMERGENCY MEDICAL SITUATIONS**

1. Call the CMU Police and advise them of the situation.
2. Advise CMU Police as to the nature of the problem.
3. Advise CMU Police of your exact location.
4. **DO NOT HANG UP!** Allow CMU Police to hang up first.

## **XII. DEALING WITH THE MEDIA**

### **A. Where to refer media inquiries**

It is the policy of CMU that all inquiries made by the media regarding anything to do with the operation or actions of the University or its staff and faculty be directed to the Public Relations Office (3197).

#### **Media Relations Policy**

Responding to the press: The public relations and marketing office will be responsible for coordinating the University's responses to the press; the associate vice president will serve as the University's official spokesperson, although other University officials (i.e., president, vice presidents, individuals with specific areas of expertise) may also be needed to respond publicly depending upon the nature of the crisis. The news bureau staff in the public relations and marketing office is trained to work with and anticipate the needs of the press. In addition, reporters are likely to contact the Public Relations office for responses. The news bureau staff maintains phone and fax numbers for media throughout the state and country.

### **XIII. LOCATIONS OF EMERGENCY EQUIPMENT**

#### **A. Floor Plans**

The following pages contain floor plans which indicate the locations of various emergency equipment. The equipment which has locations indicated on the floor plans are:

- Fire alarm pull stations
- Fire extinguishers
- Tornado shelter areas
- Exits

## **XIV. TERMINATING THE EMERGENCY**

This section of the Emergency Action Plan will deal with those activities necessary to support employees and students during and following an emergency situation and those activities necessary to restore operations at Central Michigan University.

### **Recovery of Operations**

The recovery of building operations and services will be based on the extent of damage suffered to the building. The Powers Hall Emergency Coordinator will need to prioritize activities that can be accomplished with available staff and resources. Immediately following the emergency phase of the incident, the Powers Hall Emergency Coordinator and Facilities Management will begin the implementation of the university business recovery plan.

### **Documentation**

Documentation of emergency activities is of critical importance following the emergency situation. All records and forms used during the incident to document activities must be retained for future reference.

### **Responsibility for Incident Documentation**

- (a) Following an emergency situation, the Powers Hall Emergency Coordinator will have the responsibility of collecting all records and forms used during the incident. These will be used for several purposes, such as incident investigation, insurance claims, and potential legal actions.
- (b) The Powers Hall Emergency Coordinator must prepare a report documenting activities that took place during the emergency situation.
- (c) The report of the Powers Hall Emergency Coordinator and all related documentation will be submitted to the President for review and necessary follow-up actions.

### **Responsibility for Damage Assessment**

The Powers Hall Emergency Coordinator will have the main responsibility for conducting the damage assessment following an incident. Assistance will be obtained as needed from facility personnel and outside organizations, such as structural engineers and local government officials.

### **Post-Emergency Activities**

Post-emergency activities are those that tend to the welfare of the facility personnel and provide for a review of facility actions during the incident.

**Injuries should be reported as follows:**

Please report employee (including student employee) injuries or illnesses to the Workers' Compensation office at 774-7177 as soon as possible. All injuries to students, non-employees or visitors should be reported to the Risk Management & Insurance office at 774-3741.

**Incident Debriefing**

The incident debriefing is utilized to inform personnel about any hazards that may still remain on the facility property following the incident and to identify unsafe conditions that may exist.

Some employees and/or students may be profoundly impacted from the events surrounding the incident, especially those involving injuries or loss of life. It may be necessary to provide critical incident stress debriefing sessions following such incidents. The Powers Hall Emergency Coordinator shall make arrangements for counseling services as needed following an emergency situation.

**Critique**

The critique of the incident is basically a review of what actions took place during the incident, both good and bad. A critique is not designed to place blame, but rather to allow for the flow of ideas and recommendations to improve the emergency action plan and the facility policies and procedures.

# Appendix A

## State and Federal Regulations

1910.36

1910.36 General requirements.

1910.36(a)

(a) Application. This subpart contains general fundamental requirements essential to providing a safe means of egress from fire and like emergencies. Nothing in this subpart shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in this subpart. Exits from vehicles, vessels, or other mobile structures are not covered by this subpart.

1910.36(b)

(b) Fundamental requirements.

1910.36(b)(1)

(1) Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

1910.36(b)(2)

(2) Every building or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

1910.36(b)(3)

(3) Every building or structure shall be provided with exits of kinds, numbers, location, and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

1910.36(b)(4)

(4) In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

1910.36(b)(5)

(5) Every exit shall be clearly visible or the route to reach it shall be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point, and each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety outside is unmistakable. Any doorway or passageway not constituting an exit or way to reach an exit, but of such a

character as to be subject to being mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out.

1910.36(b)(6)

(6) In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

1910.36(b)(7)

(7) In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire so that they may escape, or to facilitate the orderly conduct of fire exit drills.

1910.36(b)(8)

(8) Every building or structure, section, or area thereof of such size, occupancy, and arrangement that the reasonable safety of numbers of occupants may be endangered by the blocking of any single means of egress due to fire or smoke, shall have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

STD 1-2.1

1910.36(b)(9)

(9) Compliance with this subpart shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a structure under normal occupancy conditions, nor shall any provision of the subpart be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions.

1910.36(c)

(c) Protection of employees exposed by construction and repair operations.

1910.36(c)(1)

(1) No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

1910.36(c)(2)

(2) No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or in lieu thereof other measures are taken which provide equivalent safety.

1910.36(c)(3)

(3) No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a building of normally low or ordinary hazard classification while the building is

occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

1910.36(d)

(d) Maintenance.

1910.36(d)(1)

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

1910.36(d)(2)

(2) Every automatic sprinkler system, fire detection and alarm system, exit lighting, fire door, and other item of equipment, where provided, shall be continuously in proper operating condition.

1910.38

1910.38 Employee emergency plans and fire prevention plans.

1910.38(a)

(a) Emergency action plan

1910.38(a)(1)

(1) Scope and application. This paragraph (a) applies to all emergency action plans required by a particular OSHA standard. The emergency action plan shall be in writing (except as provided in the last sentence of paragraph (a)(5)(iii) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

1910.38(a)(2)

(2) Elements. The following elements, at a minimum, shall be included in the plan:

1910.38(a)(2)(i)

(i) Emergency escape procedures and emergency escape route assignments;

1910.38(a)(2)(ii)

(ii) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

1910.38(a)(2)(iii)

(iii) Procedures to account for all employees after emergency evacuation has been completed;

1910.38(a)(2)(iv)

(iv) Rescue and medical duties for those employees who are to perform them;

1910.38(a)(2)(v)

(v) The preferred means of reporting fires and other emergencies; and

1910.38(a)(2)(vi)

(vi) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

1910.38(a)(3)

(3) Alarm system.

1910.38(a)(3)(i)

(i) The employer shall establish an employee alarm system which complies with 1910.165.

1910.38(a)(3)(ii)

(ii) If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

1910.38(a)(4)

(4) Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

1910.38(a)(5)

(5) Training.

1910.38(a)(5)(i)

(i) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

1910.38(a)(5)(ii)

(ii) The employer shall review the plan with each employee covered by the plan at the following times:

1910.38(a)(5)(ii)(A)

(A) Initially when the plan is developed,

1910.38(a)(5)(ii)(B)

(B) Whenever the employee's responsibilities or designated actions under the plan change, and

1910.38(a)(5)(ii)(C)

(C) Whenever the plan is changed.

1910.38(a)(5)(iii)

(iii) The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For those

employers with 10 or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

1910.38(b)

(b) Fire prevention plan

1910.38(b)(1)

(1) Scope and application. This paragraph (b) applies to all fire prevention plans required by a particular OSHA standard. The fire prevention plan shall be in writing, except as provided in the last sentence of paragraph (b)(4)(ii) of this section.

1910.38(b)(2)

(2) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

1910.38(b)(2)(i)

(i) A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

1910.38(b)(2)(ii)

(ii) Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

1910.38(b)(2)(iii)

(iii) Names or regular job titles of those personnel responsible for control of fuel source hazards.

1910.38(b)(3)

(3) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

1910.38(b)(4)

(4) Training.

1910.38(b)(4)(i)

(i) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

1910.38(b)(4)(ii)

(ii) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

1910.38(b)(5)

(5) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

[45 FR 60703, Sept. 12, 1980]

## 1910 Subpart E App

### APPENDIX TO SUBPART E - MEANS OF EGRESS

This appendix serves as a nonmandatory guideline to assist employers in complying with the appropriate requirements of Subpart E.

#### 1910.38 Employee emergency plans

1. Emergency action plan elements. The emergency action plan should address emergencies that the employer may reasonably expect in the workplace. Examples are: fire; toxic chemical releases; hurricanes; tornadoes; blizzards; floods; and others. The elements of the emergency action plan presented in paragraph 1910.38(a)(2) can be supplemented by the following to more effectively achieve employee safety and health in an emergency. The employer should list in detail the procedures to be taken by those employees who have been selected to remain behind to care for essential plant operations until their evacuation becomes absolutely necessary. Essential plant operations may include the monitoring of plant power supplies, water supplies, and other essential services which cannot be shut down for every emergency alarm. Essential plant operations may also include chemical or manufacturing processes which must be shut down in stages or steps where certain employees must be present to assure that safe shut down procedures are completed.

The use of floor plans or workplace maps which clearly show the emergency escape routes should be included in the emergency action plan. Color coding will aid employees in determining their route assignments.

The employer should also develop and explain in detail what rescue and medical first aid duties are to be performed and by whom. All employees are to be told what actions they are to take in these emergency situations that the employer anticipates may occur in the workplace.

2. Emergency evacuation. At the time of an emergency, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In some cases where the emergency is very grave, total and immediate evacuation of all employees is necessary. In other emergencies, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. In some cases, only those employees in the immediate area of the fire may be expected to evacuate or move to a safe area such as when a local application fire suppression system discharge employee alarm is sounded. Employees must be sure that they know what is expected of them in all such emergency possibilities which have been planned in order to provide assurance of their safety from fire or other emergency.

The designation of refuge or safe areas for evacuation should be determined and identified in the plan. In a building divided into fire zones by fire walls, the refuge area may still be within the same building but in a different zone from where the emergency occurs.

Exterior refuge or safe areas may include parking lots, open fields or streets which are located away from the site of the emergency and which provide sufficient space to accommodate the employees. Employees should be instructed to move away from the exit discharge doors of the building, and to avoid congregating close to the building where they may hamper emergency operations.

3. Emergency action plan training. The employer should assure that an adequate number of employees are available at all times during working hours to act as evacuation wardens so that employees can be swiftly moved from the danger location to the safe areas. Generally, one warden for each twenty employees in the workplace should be able to provide adequate guidance and instruction at the time of a fire emergency. The employees selected or who volunteer to serve as wardens should be trained in the complete workplace layout and the various alternative escape routes from the workplace. All wardens and fellow employees should be made aware of handicapped employees who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, wardens should check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

After the desired degree of evacuation is completed, the wardens should be able to account for or otherwise verify that all employees are in the safe areas.

In buildings with several places of employment, employers are encouraged to coordinate their plans with the other employers in the building. A building-wide or standardized plan for the whole building is acceptable provided that the employers inform their respective employees of their duties and responsibilities under the plan. The standardized plan need not be kept by each employer in the multi-employer building, provided there is an accessible location within the building where the plan can be reviewed by affected employees. When multi-employer building-wide plans are not feasible, employers should coordinate their plans with the other employers within the building to assure that conflicts and confusion are avoided during times of emergencies. In multi-story buildings where more than one employer is on a single floor, it is essential that these employers coordinate their plans with each other to avoid conflicts and confusion.

4. Fire prevention housekeeping. The standard calls for the control of accumulations of flammable and combustible waste materials.

It is the intent of this standard to assure that hazardous accumulations of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. This does not necessarily mean that each room has to be swept each day. Employers and employees should be aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses. Certainly oil soaked rags have to be treated differently than general paper trash in office areas. However, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this standard is concerned. Such

combustible materials may be easily ignited by matches, welder's sparks, cigarettes and similar low level energy ignition sources.

5. Maintenance of equipment under the fire prevention plan. Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturers' recommendations should be followed to assure proper maintenance procedures.

[45 FR 60714, Sept. 12, 1980]

1910.157

1910.157 Portable fire extinguishers.

#### PORTABLE FIRE SUPPRESSION EQUIPMENT

1910.157(a)

(a) Scope and application. The requirements of this section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. Paragraph (d) of this section does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the requirements of 1910.38, then only the requirements of paragraphs (e) and (f) of this section apply.

1910.157(b)

(b) Exemptions.

1910.157(b)(1)

(1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of 1910.38, and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific standard in Part 1910 requires that a portable fire extinguisher be provided.

1910.157(b)(2)

(2) Where the employer has an emergency action plan meeting the requirements of 1910.38 which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in paragraph (d) of this section.

1910.157(c)

(c) General requirements.

1910.157(c)(1)

(1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

1910.157(c)(2)

(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.

1910.157(c)(3)

(3) The employer shall not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

1910.157(c)(4)

(4) The employer shall assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

1910.157(c)(5)

(5) The employer shall remove from service all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent.

1910.157(d)

(d) Selection and distribution.

1910.157(d)(1)

(1) Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

1910.157(d)(2)

(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.

1910.157(d)(3)

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of 1910.158 or 1910.159, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

1910.157(d)(4)

(4) The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.

1910.157(d)(5)

(5) The employer shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

1910.157(d)(6)

(6) The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.

1910.157(e)

(e) Inspection, maintenance and testing.

1910.157(e)(1)

(1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

1910.157(e)(2)

(2) Portable extinguishers or hose used in lieu thereof under paragraph (d)(3) of this section shall be visually inspected monthly.

1910.157(e)(3)

(3) The employer shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available to the Assistant Secretary upon request.

1910.157(e)(4)

(4) The employer shall assure that stored pressure dry chemical extinguishers that require a 12-year hydrostatic test are emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.

1910.157(e)(5)

(5) The employer shall assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

1910.157(f)  
(f) Hydrostatic testing.  
STD 1-9.2

1910.157(f)(1)  
(1) The employer shall assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

1910.157(f)(2)  
(2) The employer shall assure that portable extinguishers are hydrostatically tested at the intervals listed in Table L-1 of this section, except under any of the following conditions:

1910.157(f)(2)(i)  
(i) When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

1910.157(f)(2)(ii)  
(ii) When the cylinder or shell threads are damaged;

1910.157(f)(2)(iii)  
(iii) When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

1910.157(f)(2)(iv)  
(iv) When the extinguisher has been burned in a fire; or

1910.157(f)(2)(v)  
(v) When a calcium chloride extinguishing agent has been used in a stainless steel shell.

1910.157(f)(3)  
(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

**TABLE L-1**

TYPE OF EXTINGUISHERS	TEST INTERVAL (YEARS)
Soda acid (soldered brass shells)(until 1/1/82)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells)(until 1/1/82)	(1)
Foam (stainless steel shell)	5
Aqueous Film Forming Foam (AFFF) .....	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon Dioxide .....	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12
.....	

FOOTNOTE(1) Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted)

1910.157(f)(4)

(4) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in paragraphs (f)(2)(i)-(v) of this section.

1910.157(f)(5)

(5) The employer shall assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose. The test interval shall be the same as specified for the extinguisher on which the hose is installed.

1910.157(f)(6)

(6) The employer shall assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

1910.157(f)(7)

(7) The employer shall assure that dry chemical and dry powder hose assemblies with a shut-off nozzle are hydrostatically tested at 300 psi (2,070 kPa).

1910.157(f)(8)

(8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

1910.157(f)(9)

(9) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

1910.157(f)(10)

(10) The employer shall assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every 5 years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with 49 CFR 173.34(e)(15) may be hydrostatically tested every 10 years.

1910.157(f)(11)

(11) The employer shall assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.

1910.157(f)(12)

(12) The employer shall assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

1910.157(f)(13)

(13) Air or gas pressure may not be used for hydrostatic testing.

1910.157(f)(14)

(14) Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.

1910.157(f)(15)

(15)

1910.157(f)(15)(i)

(i) The equipment for testing compressed gas type cylinders shall be of the water jacket type. The equipment shall be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or .1cc (.1mL) of liquid.

1910.157(f)(15)(ii)

(ii) The equipment for testing non-compressed gas type cylinders shall consist of the following:

1910.157(f)(15)(ii)(A)

(A) A hydrostatic test pump, hand or power operated, capable of producing not less than 150 percent of the test pressure, which shall include appropriate check valves and fittings;

1910.157(f)(15)(ii)(B)

(B) A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and

1910.157(f)(15)(ii)(C)

(C) A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

1910.157(f)(16)

(16) The employer shall maintain and provide upon request to the Assistant Secretary evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table L-1. Such evidence shall be in the form of a certification record which includes the date of the test, the signature of the person who performed the test and the serial number, or other identifier, of the fire extinguisher that was tested. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval specified in Table L-1 or until the extinguisher is taken out of service, whichever comes first.

1910.157(g)

(g) Training and education.

1910.157(g)(1)

(1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

1910.157(g)(2)

(2) The employer shall provide the education required in paragraph (g)(1) of this section upon initial employment and at least annually thereafter.

1910.157(g)(3)

(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

1910.157(g)(4)

(4) The employer shall provide the training required in paragraph (g)(3) of this section upon initial assignment to the designated group of employees and at least annually thereafter.

[45 FR 60708, Sept. 12, 1980; 46 FR 24557, May 1, 1981, as amended at 51 FR 34560, Sept. 29, 1986; 61 FR 9228, Mar. 07, 1996]

1910.158

1910.158 Standpipe and hose systems.

1910.158(a)

(a) Scope and application

1910.158(a)(1)

(1) Scope. This section applies to all small hose, Class II, and Class III standpipe systems installed to meet the requirements of a particular OSHA standard.

1910.158(a)(2)

(2) Exception. This section does not apply to Class I standpipe systems.

1910.158(b)

(b) Protection of standpipes. The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly.

1910.158(c)

(c) Equipment

1910.158(c)(1)

(1) Reels and cabinets. Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

1910.158(c)(2)

(2) Hose outlets and connections.

1910.158(c)(2)(i)

(i) The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

1910.158(c)(2)(ii)

(ii) The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

1910.158(c)(3)

(3) Hose.

1910.158(c)(3)(i)

(i) The employer shall assure that every 1 1/2" (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is readily available and can be connected when needed.

1910.158(c)(3)(ii)

(ii) Standpipe systems installed after January 1, 1981, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

1910.158(c)(3)(iii)

(iii) The employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

1910.158(c)(4)

(4) Nozzles. The employer shall assure that standpipe hose is equipped with shut-off type nozzles.

1910.158(d)

(d) Water supply. The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of at least thirty minutes.

1910.158(e)

(e) Tests and maintenance

1910.158(e)(1)

(1) Acceptance tests.

1910.158(e)(1)(i)

(i) The employer shall assure that the piping of Class II and Class III systems installed after January 1, 1981, including yard piping, is hydrostatically tested for a period of at least 2 hours at not less than 200 psi (1380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1030 kPa).

1910.158(e)(1)(ii)

(ii) The employer shall assure that hose on all standpipe systems installed after January 1, 1981, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1380 kPa), before it is placed in service. This pressure shall be maintained for at least 15 seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

1910.158(e)(2)

(2) Maintenance.

1910.158(e)(2)(i)

(i) The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

1910.158(e)(2)(ii)

(ii) The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

1910.158(e)(2)(iii)

(iii) The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

1910.158(e)(2)(iv)

(iv) When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

1910.158(e)(2)(v)

(v) The employer shall assure that hemp or linen hose on existing systems is unracked, physically inspected for deterioration, and racked using a different fold pattern at least annually. The employer shall assure that defective hose is replaced in accordance with paragraph (c)(3)(ii).

1910.158(e)(2)(vi)

(vi) The employer shall designate trained persons to conduct all inspections required under this section.

[45 FR 60710, Sept. 12, 1980; 61 FR 9228, Mar. 07, 1996]

1910.159

1910.159 Automatic sprinkler systems.

**FIXED FIRE SUPPRESSION EQUIPMENT**

1910.159(a)

(a) Scope and application.

1910.159(a)(1)

(1) The requirements of this section apply to all automatic sprinkler systems installed to meet a particular OSHA standard.

1910.159(a)(2)

(2) For automatic sprinkler systems used to meet OSHA requirements and installed prior to the effective date of this standard, compliance with the National Fire Protection Association (NFPA) or the National Board of Fire Underwriters (NBFU) standard in effect at the time of the system's installation will be acceptable as compliance with this section.

1910.159(b)

(b) Exemptions. Automatic sprinkler systems installed in workplaces, but not required by OSHA, are exempt from the requirements of this section.

1910.159(c)

(c) General requirements

1910.159(c)(1)

(1) Design.

1910.159(c)(1)(i)

(i) All automatic sprinkler designs used to comply with this standard shall provide the necessary discharge patterns, densities, and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.

1910.159(c)(1)(ii)

(ii) The employer shall assure that only approved equipment and devices are used in the design and installation of automatic sprinkler systems used to comply with this standard.

1910.159(c)(2)

(2) Maintenance. The employer shall properly maintain an automatic sprinkler system installed to comply with this section. The employer shall assure that a main drain flow test is performed on each system annually. The inspector's test valve shall be opened at least every two years to assure that the sprinkler system operates properly.

1910.159(c)(3)

(3) Acceptance tests. The employer shall conduct proper acceptance tests on sprinkler systems installed for employee protection after January 1, 1981, and record the dates of such tests. Proper acceptance tests include the following:

1910.159(c)(3)(i)

(i) Flushing of underground connections;

1910.159(c)(3)(ii)

(ii) Hydrostatic tests of piping in system;

1910.159(c)(3)(iii)

(iii) Air tests in dry-pipe systems;

1910.159(c)(3)(iv)

(iv) Dry-pipe valve operation; and

1910.159(c)(3)(v)

(v) Test of drainage facilities.

1910.159(c)(4)

(4) Water supplies. The employer shall assure that every automatic sprinkler system is provided with at least one automatic water supply capable of providing design water flow for at least 30

minutes. An auxiliary water supply or equivalent protection shall be provided when the automatic water supply is out of service, except for systems of 20 or fewer sprinklers.

1910.159(c)(5)

(5) Hose connections for fire fighting use. The employer may attach hose connections for fire fighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinklers and standpipes.

1910.159(c)(6)

(6) Protection of piping. The employer shall assure that automatic sprinkler system piping is protected against freezing and exterior surface corrosion.

1910.159(c)(7)

(7) Drainage. The employer shall assure that all dry sprinkler pipes and fittings are installed so that the system may be totally drained.

1910.159(c)(8)

(8) Sprinklers.

1910.159(c)(8)(i)

(i) The employer shall assure that only approved sprinklers are used on systems.

1910.159(c)(8)(ii)

(ii) The employer may not use older style sprinklers to replace standard sprinklers without a complete engineering review of the altered part of the system.

1910.159(c)(8)(iii)

(iii) The employer shall assure that sprinklers are protected from mechanical damage.

1910.159(c)(9)

(9) Sprinkler alarms. On all sprinkler systems having more than twenty (20) sprinklers, the employer shall assure that a local waterflow alarm is provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

1910.159(c)(10)

(10) Sprinkler spacing. The employer shall assure that sprinklers are spaced to provide a maximum protection area per sprinkler, a minimum of interference to the discharge pattern by building or structural members or building contents and suitable sensitivity to possible fire hazards. The minimum vertical clearance between sprinklers and material below shall be 18 inches (45.7 cm).

1910.159(c)(11)

(11) Hydraulically designed systems. The employer shall assure that hydraulically designed automatic sprinkler systems or portions thereof are identified and that the location, number of sprinklers in the hydraulically designed section, and the basis of the design is indicated. Central

records may be used in lieu of signs at sprinkler valves provided the records are available for inspection and copying by the Assistant Secretary.

[45 FR 60710, Sept. 12, 1980; 46 FR 24557, May 1, 1981]

1910.164

1910.164 Fire detection systems.

#### OTHER FIRE PROTECTION SYSTEMS

1910.164(a)

(a) Scope and application. This section applies to all automatic fire detection systems installed to meet the requirements of a particular OSHA standard.

1910.164(b)

(b) Installation and restoration.

1910.164(b)(1)

(1) The employer shall assure that all devices and equipment constructed and installed to comply with this standard are approved for the purpose for which they are intended.

1910.164(b)(2)

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires shall be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system.

1910.164(c)

(c) Maintenance and testing.

1910.164(c)(1)

(1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

1910.164(c)(2)

(2) The employer shall assure that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

1910.164(c)(3)

(3) The employer shall assure that pneumatic and hydraulic operated detection systems installed after January 1, 1981, are equipped with supervised systems.

1910.164(c)(4)

(4) The employer shall assure that the servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments are performed by a trained person knowledgeable in the operations and functions of the system.

1910.164(c)(5)

(5) The employer shall also assure that fire detectors that need to be cleaned of dirt, dust, or other particulates in order to be fully operational are cleaned at regular periodic intervals.

1910.164(d)

(d) Protection of fire detectors.

1910.164(d)(1)

(1) The employer shall assure that fire detection equipment installed outdoors or in the presence of corrosive atmospheres be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection for detection equipment requiring protection from the weather.

1910.164(d)(2)

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

1910.164(d)(3)

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing.

1910.164(e)

(e) Response time.

1910.164(e)(1)

(1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

1910.164(e)(2)

(2) The employer shall assure that fire detection systems installed for the purpose of employee alarm and evacuation be designed and installed to provide a warning for emergency action and safe escape of employees.

1910.164(e)(3)

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than 30 seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of 1910.38.

1910.164(f)

(f) Number, location and spacing of detecting devices. The employer shall assure that the number, spacing and location of fire detectors is based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing.

[45 FR 60713, Sept. 12, 1980]

1910.164

1910.164 Fire detection systems.  
OTHER FIRE PROTECTION SYSTEMS

1910.164(a)

(a) Scope and application. This section applies to all automatic fire detection systems installed to meet the requirements of a particular OSHA standard.

1910.164(b)

(b) Installation and restoration.

1910.164(b)(1)

(1) The employer shall assure that all devices and equipment constructed and installed to comply with this standard are approved for the purpose for which they are intended.

1910.164(b)(2)

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires shall be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system.

1910.164(c)

(c) Maintenance and testing.

1910.164(c)(1)

(1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

1910.164(c)(2)

(2) The employer shall assure that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

1910.164(c)(3)

(3) The employer shall assure that pneumatic and hydraulic operated detection systems installed after January 1, 1981, are equipped with supervised systems.

1910.164(c)(4)

(4) The employer shall assure that the servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments are performed by a trained person knowledgeable in the operations and functions of the system.

1910.164(c)(5)

(5) The employer shall also assure that fire detectors that need to be cleaned of dirt, dust, or other particulates in order to be fully operational are cleaned at regular periodic intervals.

1910.164(d)

(d) Protection of fire detectors.

1910.164(d)(1)

(1) The employer shall assure that fire detection equipment installed outdoors or in the presence of corrosive atmospheres be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection for detection equipment requiring protection from the weather.

1910.164(d)(2)

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

1910.164(d)(3)

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing.

1910.164(e)

(e) Response time.

1910.164(e)(1)

(1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

1910.164(e)(2)

(2) The employer shall assure that fire detection systems installed for the purpose of employee alarm and evacuation be designed and installed to provide a warning for emergency action and safe escape of employees.

1910.164(e)(3)

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than 30 seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of 1910.38.

1910.164(f)

(f) Number, location and spacing of detecting devices. The employer shall assure that the number, spacing and location of fire detectors is based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing.

[45 FR 60713, Sept. 12, 1980]

Appendix B

FIRE AND SAFETY EQUIPMENT

MONTHLY INSPECTION FORM

# Fire and Safety Equipment Monthly Inspection Form

DATE: \_\_\_\_\_

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

BUILDING: \_\_\_\_\_

Are fire extinguishers charged? \_\_\_\_\_

Are they inspected monthly by Facilities Management? \_\_\_\_\_

Are smoke detectors functioning properly? \_\_\_\_\_

Is the fire alarm pull boxes obvious to all persons, not blocked by materials and along normal paths of travel? \_\_\_\_\_

Are fire exits blocked? \_\_\_\_\_

Are flammable and combustible materials stored properly? \_\_\_\_\_

Are NO SMOKING signs posted? \_\_\_\_\_

# Appendix C

Emergency Action Plan

Exercise Evaluation Form

## Emergency Action Plan Exercise Evaluation Form

Facility: \_\_\_\_\_

Date of Drill: \_\_\_\_/\_\_\_\_/\_\_\_\_

Time of Drill: \_\_\_\_\_

Type of Drill Conducted:

- 9     Fire
- 9     Severe Weather
- 9     Medical Emergency
- 9     Chemical Release
- 9     Bomb Threat
- 9     Power Failure

Length of time required to complete all exercise activities: \_\_\_\_\_

List any problems encountered during the drill: \_\_\_\_\_

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List any recommendations for improvement to the Plan: \_\_\_\_\_

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Signature of exercise evaluator: \_\_\_\_\_

Send copy of completed form to Environmental & Safety Services Coordinator, Jon Kujat, and Facility Emergency Coordinator.

# Appendix D

## Fire Drill Report Form

REPORT OF FIRE DRILL

[ ] False Alarm \_\_\_\_\_ Total # of False Alarms this Academic Year  
[ ] Planned Drill \_\_\_\_\_ Total # of Planned Drills this Academic Year

Building \_\_\_\_\_

Date of and time of drill or alarm \_\_\_\_\_

Length of time elapsed from moment of alarm until all rooms were clear  
\_\_\_\_\_

Did all personnel evacuate rooms? \_\_\_\_\_

If no, explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Were any means of egress excessively congested?  
\_\_\_\_\_

If yes, explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Did the alarm system function properly? \_\_\_\_\_  
\_\_\_\_\_

What difficulties, if any, were observed? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Did the employees perform in a satisfactory manner? \_\_\_\_\_  
\_\_\_\_\_

What recommendations do you have for future drills or alarms? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature of Powers Hall Building Emergency Coordinator

Revised October 1998

Copy to: Environmental & Safety Services - Jon Kujat

**FIRE HYDRANT LOCATIONS AT CMU**

**Franklin Street**

Franklin at Bellows	(see Bellows)
Franklin at Lot 10	(Warriner)
Franklin at Preston	(see Preston)

**East Campus Drive**

East Campus Drive at Lot 14	(Rowe)
East Campus Drive at Power House	

Ronan Hall southwest corner

Warriner

North side

Southeast

(see Franklin)

Sloan

East side

Brooks

Northeast

Southeast

Southwest

Woldt-Emmons

Northeast of Woldt

East of kitchen

Towers

East of Cobb

East of Wheeler

East of Carey

Southwest of Troutman

Kelly/Shorts Stadium

Northwest corner

**Broomfield Road**

South of Beddow Hall  
South of Thorpe Hall  
Southwest of Herrig Hall  
Southeast of Herrig Hall

**Kewadin Village**

South of building 2  
South of building 6  
Northeast of building 10

**Rose-Ryan Center**

Northeast	(2 hydrants)
East	
Southeast	
Southwest	(2 hydrants)
Northwest	(2 hydrants)

**Algonquin Court**

Southeast of Calkins Hall

**Washington Street**

Washington at Bellows	(see Bellows)
Washington at Hopkins	
Washington at Preston	(see Preston)
Washington at Anspach	
Washington at Ojibway	(see Washington Apts.)
Washington at Lot 44	(Merrill Hall)

**Main Street**

Main street at Lot 5	(Grawn)
----------------------	---------

**Northwest Apartment Area**

Between apts. 1 and 2  
East side apt. 3  
Between apts. 10 and 11  
West side apt. 14

**Bellows Street**

Bellows at Douglas (off campus)  
Bellows at Washington  
Bellows at Franklin (off campus)  
Bellows at Lansing  
Bellows at Mission (off campus)

**Preston Street**

Preston at Vernon (off campus)  
Preston at "A" Frame (west end)  
Preston at Washington  
Preston at UC Crosswalk  
Preston at Franklin  
Preston at Finch service drive  
Preston at Foust (2 hydrants)

**Preston Street Apartments**

East of apartment C  
North of apartment D  
North of apartment F

**Washington Street Apartments**

North of apartment P  
South of apartment R  
South of apartment N  
South of apartment L  
South of apartment HH

## **Appendix F**

### **Fire Alarms/Sprinkler Systems**

