



**NEW MEXICO STATE UNIVERSITY**  
**FIRE PREVENTION GUIDELINES AND PRACTICES**  
Effective May 12, 2009





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# NMSU FIRE PREVENTION GUIDELINE and PRACTICES

## Introduction:

The NMSU Fire Prevention Guideline and Practices (FPGP) program is primarily a reiteration of existing national and state standards and laws. The NMSU Department of Fire and Emergency Services (DFES) is recognized as the Authority Having Jurisdiction (AHJ) in matters related to fire safety. As the Authority Having Jurisdiction, deviations may be allowed in some cases. Deviations will be evaluated on a case-by-case basis. This program also contains practices designed and implemented to protect university staff, employees, students, visitors, and contractors from uncontrolled fires. It is also designed to protect the property and assets of the University.

## A. SCOPE

This program is applicable to all university faculty, staff, students, visitors, and contractors working or conducting business on the NMSU Las Cruces (NMSU) and NMSU Dona Ana Community College (DACC) located on the NMSU Las Cruces campus. The National Fire Protection Association (NFPA), International Fire Code (IFC), International Building Code (IBC) and the Occupational Safety and Health Administration (OSHA) standards are the primary resources used in the development of this program. Any area not specifically covered in the FPGP may be referenced in one of the above standards and will apply as necessary.

## B. DEFINITIONS

**Area of Refuge** - Any area, room or section of a building, which by virtue of its construction will provide a safe area for persons to enter during a fire situation until rescue is made.

**Authority Having Jurisdiction (AHJ)** - Federal, state, or other department having statutory authority. For the purposes of this policy, the AHJ is the New Mexico State University Department of Fire and Emergency Services (DFES).

**Approved** - Used to reference that a procedure, product or equipment has met the safety requirements of a recognized local, state, federal or national safety standard.

**Automatic** - Equipment that functions without human intervention, including automatic detection or suppression systems, automatic alarms, and emergency shut down devices.

**Combustible Material** - Solid material capable of igniting and burning.

**Combustible Liquid** - Liquids with a flash point of 100° Fahrenheit or above, which are capable of ignition and require a higher degree of heat to produce a fire.

**Exit** - The portion of a means of egress that is separated from all other spaces of the building to provide a protected way of travel to the exit discharge.

**Exit Discharge** - That portion of a means of egress that is separated between the termination of an exit and a public way.

**Emergency Device** - Any type of emergency safety device or equipment, including fire alarm pull stations, fire extinguishers, fire alarms, smoke detectors, fire hydrants, fire department connections, etc.

**Fire Compartment** - A space within a building enclosed on all sides by fire barriers, including the ceiling and floor, able to withstand the passage of fire and/or smoke for a limited time.

**Flammable Liquid** - Liquids that have a flash point of less than 100° Fahrenheit, which will ignite at a low temperature and continue to burn.

**Hazardous Products/Area** - A flammable, combustible, toxic, corrosive, noxious heat-producing product or appliance which could cause ill affects to humans if released in an uncontrolled amount or manner. A hazardous area is any room or structure in which these products are processed, stored or used.

**Means of Egress** - The direction or way a person would evacuate a building in an emergency.

**Occupant Load** - The maximum number of people who can occupy any given space with sufficient room to move about, complete a function, and/ or safely evacuate the building.

**Self-closing** - A device that ensures a door or required enclosure will, when opened, return to the closed and latched position without human intervention, when opened.

**Special Event** - Any event or activity that would not be considered of normal nature to the particular type of business within the facility.

**Surge Protector** - An approved multi-plug extension cord device, which incorporates an on/off switch, built-in fuse, and is Underwriter's Laboratory (UL) or Factory Mutual (FM) tested.

## **C. PROGRAM COMPLIANCE**

Due to the danger of injury and/or death from fire or fire-related emergencies, staff, faculty, students, and contractors should comply with this program. Any hazardous or emergency situation must be reported to DFES. Failure to comply could result in the possible loss of life and/or property.

## **D. RESPONSIBILITIES**

**NMSU Administration** - To provide NMSU, through support and funding, with a safety program which will provide staff, faculty, employees, students, and visitors the guidelines, programs, and policies which will ensure their safety.

**Deans, Directors, and Department Chairs** - Responsible for implementing safety programs in areas under their control, and providing assistance to DFES in conducting safety inspections, correcting hazards and concerns, and implementing fire prevention and evacuation policies.

**Environmental Health and Safety Office (EH&S)** - Responsible for the development, coordination, implementation, and training of safety programs. The EH&S is responsible for providing assistance to all NMSU staff, faculty and employees in correction of safety hazards and concerns.

**Managers and Supervisors** - Responsible for ensuring that their areas of responsibility are compliant with approved fire safety practices, receive the required training and coordinate code violation corrections with DFES.

**Maintenance Personnel** - Responsible for ensuring the proper maintenance, operation, and documentation of all emergency and safety devices under their control.

**Faculty, Staff, Students** - Shall become aware of and comply with fire safety programs, attend required training, and report any suspected fire safety hazard to DFES.

**Students** - Although not specifically required to be trained in the same manner as faculty and staff, students are urged to become familiar with the safety policies of NMSU and should report any potential fire safety hazard to DFES.

**Contractors** – Are responsible for compliance with local, state and federal safety standards. Contractors have the responsibility to ensure that their work does not create fire or other safety hazards.

## **E. FIRE SAFETY GUIDELINES AND PROCEDURES**

The following requirements are the minimum acceptable practices for NMSU. Occasions may arise where more stringent standards may be imposed. Exceptions must be approved by DFES.

### **1. General Fire Safety**

Fire safety is a matter of common sense, education, and training. By following the guidelines and requirements of this program, we can prevent most of the situations that cause fires to start.

- a. NMSU is under the jurisdiction of the New Mexico State Fire Marshal's Office (FMO). The State of New Mexico has adopted the National Fire Protection Association (NFPA) Standards. NMSU DFES is granted Authority Having Jurisdiction (AHJ) from the New Mexico State FMO and is the authority in all matters dealing with fire safety for NMSU and NMSU-DACC.
- b. Fire safety inspections are primarily conducted by DFES, who will have the authority to enter any NMSU-owned property to conduct an inspection or investigation. DFES will provide notification, outlining hazards noted with required and/or recommended corrective actions, and will assist in coordination of corrective action.

- c. Fire safety inspections or walkthroughs should be scheduled between DFES and the facility monitor or responsible party to coordinate the identification and corrective action of hazards.
- d. Contractors hired by any NMSU department are required to comply with the policies of this institution where applicable: unless the contractor has its own approved safety program that equals or exceeds NMSU's program. All contractors will ensure that their employees are aware of this safety program, and the fire reporting and evacuation procedures of the facility in which they are working. In all cases, the more restrictive code or standard shall apply. NMSU departments hiring outside contractors should ensure the contractors are made aware of the contents and requirements of this document.
- e. Any special event that occurs on NMSU property must be coordinated with DFES. DFES will assist with an evaluation, and if necessary, make recommendations on any hazards that the event may present.

## **2. Training**

The best way to avoid a fire is to be knowledgeable of fire hazards and how to prevent them. Specific training for processes of facilities will be provided upon request.

Each NMSU employee, faculty, and staff member shall attend fire extinguisher and safety training at least once. Training is conducted every Tuesday at 9:00 a.m. and every Wednesday at 1:00 p.m. Call the Department of Fire and Emergency Services at 646-2519 for reservations.

## **3. Smoking Policy**

Smoking-related fires are still the most common of all fires in America. This policy may be viewed at: [www.nmsu.edu/~safety/policies/policy-smoking041106.pdf](http://www.nmsu.edu/~safety/policies/policy-smoking041106.pdf)

Smoking is prohibited in or at:

- All enclosed buildings and facilities including classrooms, offices, food service venues, lavatories, and most residence halls (in accordance with Housing & Residential Life policies);
- Within 25 feet of building entrances and exits (when reasonable) and fresh air intake grills unless it is a specially designated smoking area;
- Partially or fully enclosed walkways, corridors, elevators;
- Vehicles owned, leased or rented by the University;
- Within 50 feet of any area where flammable materials are handled or stored or where other significant fire hazard may exist; and/or
- Indoor athletic or other University-sponsored or designated events.

#### 4. Electrical Safety

Work on electrical wiring or electrical equipment is permitted only under the oversight of a licensed electrician. NMSU personnel must comply with the safe use guidelines of this program.

a. Extension cords will be permitted when used:

- For temporary use only; 90 days or less;
- On non-heat producing devices (i.e. radios, computers, answering machines, etc.);
- In one continuous length. Cords may not be connected, “piggy backed” or spliced together; and/or
- As temporary wiring for holiday displays, artwork or vendors at special events provided they meet the requirements above.

b. Extension cords will not be permitted when used:

- As permanent wiring;
- For use on heat producing or high voltage devices such as heaters, coffee pots, high wattage lamps, refrigerators, microwave ovens, etc.;
- When the use will cause a tripping hazard for normal traffic or emergency evacuation;
- When fire barriers or fire rated walls are breached to run the wiring, unless the hole is properly fire-stopped and the wire properly enclosed in the appropriate conduit;
- When the cord shows signs of wear, defects, bulging, exposed wire or other damage; and/or
- In corrosive areas or near any substance which would deteriorate the cord.

c. Electrical panels must:

- Be unobstructed for 36" in front of and in all directions around the panel for access;
- Have the panel cover and panel door securely in place and closed;
- Have all breakers and main switches clearly marked as to the equipment/area they control; and/or
- Be identifiable as an electrical panel. Do not cover or paint electrical panels to match the wall, etc.

d. Electrical panels must not:

- Be locked (except when approved by DFES);
- Have the breakers taped or otherwise secured in the “on” position (except when approved by DFES);
- Have any work performed on the panel unless the work is approved and monitored by a licensed electrician; and/or

- Electrical panel/service rooms or closets shall not be used for storage of any kind.
- e. Electrical Outlets/Switches - It is possible that an overload on the electrical system can cause an outlet to spark. The safety guidelines listed below must be followed.
- f. Outlets must:
  - Have the cover plate securely fastened to the outlet box;
  - Be replaced when broken;
  - Have an approved cover. Although the National Electric Code permits metal, it is not recommended by DFES; and/or
  - Combustible items such as trashcans, boxes of papers, etc., should be kept at least two (2) feet from either side of the outlet.

## 5. Cooking Safety

Cooking-related fires are the third most common cause of fire. Cooking can be a safe and enjoyable experience if safety requirements are followed. Cooking is permitted only in areas approved by DFES.

### a. Permitted Areas

- Restaurant-style establishments;
- Residential buildings in areas designated for cooking (i.e., kitchen);
- Employee lounges and break rooms where appliances are installed in compliance with the appropriate standard, and the area is maintained in a safe manner (i.e. stoves/ovens are turned off when not in use); and/or
- Cooking should never be left unattended.

### b. Areas normally not permitted:

- Offices, laboratories, classrooms and storage areas;
- Sleeping areas in dormitories, fraternities and sororities (microwave ovens are permitted); and/or
- Automotive, industrial and manufacturing settings.

c. Special Cooking Areas: Requests for cooking in the areas mentioned above for normal or special occasions must be submitted in writing to DFES two (2) weeks in advance of the event.

d. Safety Procedures - Where cooking is permitted, the following safety procedures must be followed:

#### Residential Electric/Gas Stoves

- Stoves/ovens must have electric or gas connections installed and maintained by a qualified individual.

- Stoves and ovens, when installed, should have a grease filter over the stove. Where a grease filter is not installed, cooking will be limited to foods that will not produce grease-laden vapors.
- Combustible material, such as potholders, paper towels, etc., should be kept at least 18" from the stovetop and any burners.
- A dry chemical fire extinguisher shall be installed in or near the kitchen area. DFES will determine the required locations.
- When cooking, the stove must not be left unattended for any length of time. If it is necessary to leave the room unoccupied, the stove must be turned off.
- Do not use matches to light gas stoves equipped with electric starters. If the starter is inoperative, the unit must be repaired or replaced.
- Check all burners on the stove before leaving to ensure that all units are off.

#### Barbecue Grills (gas and charcoal)

- Barbecue grills will not be permitted for use inside or on top of buildings.
- Barbecue grills will not be used within 15 feet of a building when there is a door, window, air intake vent, or other similar avenue for smoke or uncontrolled flames to enter the building.
- All gas lines, valves and connections on gas grills will be periodically checked to detect leakage. If a leak is detected, the grill will be taken out of service until repaired.
- Used charcoal must be left in the grill until cold to the touch or thoroughly soaked in water before disposal.
- When using a charcoal grill, flammable charcoal lighter fluid will be used prior to lighting. **DO NOT ADD LIGHTER FLUID AFTER THE CHARCOAL IS LIT.** If more charcoal is required, add pre-soaked coals.
- Do not leave a grill unattended.
- Keep combustible materials at least 15 feet from the grill.
- Do not use a grill within 50 feet of flammable storage areas.
- Residents in Housing and Residential life facilities should also refer to Housing and Residential Life Guidelines.

#### Commercial Cooking

- All cooking equipment will be installed in accordance with NFPA standards for the proper installation, vapor removal and fire protection of people and the equipment.
- All commercial cooking equipment in which grease-laden vapors are produced will have an automatic dry, wet chemical or equivalent system installed. Portable fire extinguishers (dry chemical type) must also be installed in or near the kitchen area.
- Equipment, hood and grease filters must be cleaned daily. Each hood and dry chemical system must be inspected according to NFPA standards and frequencies checked by a qualified individual.

- All temperature control devices and thermostats will be inspected and certified by a qualified individual annually. Only a qualified individual will make inspections, testing, adjustments and repairs.

## 6. Storage

Storage does not constitute a fire hazard. The problem begins when items are stored in an improper manner, in a hazardous location, where other fire hazards are present, or where storage affects the safe evacuation of occupants.

a. General Storage - Any room or building used for the general storage of ordinary combustibles for temporary, long-term, or permanent storage.

- Combustible materials will be separated from more hazardous materials such as flammables, corrosives, explosives, oxidizers, etc. DFES will assist with evaluations of locations.
- Any storage area over 50 square feet must be separated by a one (1) hour fire barrier, with a fire rated, self-closing door. The area must also be protected by a fire detection and/or suppression system.
- Stored materials must be kept at least three (3) feet from any heat source. Aisles in any room used for storage must have a minimum two (2) - foot width to allow for evacuation and for firefighters to gain access to the most remote area of the room.
- Storage must not block fire extinguishers, fire alarm pull stations, emergency or exit lighting, access to evacuation routes, the exit door, emergency equipment, or entry of emergency personnel.
- Unused or unneeded NMSU property or materials should be properly disposed of through the NMSU Property Department.
- Storage under stairwells serving as a component of the fire exit is not permitted.
- Doors to storage rooms must remain closed except when entering or leaving the room.
- Smoking will not be permitted in any storage area under any conditions.
- Storage is prohibited in mechanical and electrical rooms.

b. Flammable Storage – It is critical that flammables not only be used properly but also stored safely.

"Daily Use" refers to a small amount of consumable flammables, which is expected to be used on a repetitive nature, and the amount used would not constitute more of a hazard than other ordinary combustibles in the room.

- A "Daily Use" amount of flammable liquids may be stored on open shelves.
- Flammables required to be stored away from combustibles must be stored in an approved flammable storage cabinet. This cabinet will be labeled and incorporate self-closing doors.
- Ordinary combustibles must not be stored in flammable storage cabinets.
- Oily or grease-laden rags must be kept in metal, self-closing containers.

- Only metal flammable storage cabinets meeting NFPA standards will be used.
  - Rooms used for storage must be constructed to meet the NFPA requirements for one (1) hour fire separation, ventilation, heating, electrical systems and fire detection and/or suppression.
  - Flammables generally are not permitted to be stored in basements of buildings. Exceptions will be determined and authorized in writing by DFES.
- c. High Stack/In Rack or Rolling File Storage - This type of storage has become increasingly popular for space-saving purposes for records and commodities. This also presents a different type of hazard for fire safety and fire fighting.
- It is highly recommended that non-combustible materials be used in the construction of storage racks, to reduce the amount of fire spread should a fire occur.
  - High rack or rolling file servers, which due to their configuration and height would prevent automatic sprinkler systems from proper operation, may require "in-rack" sprinklers.
  - Under no circumstances will storage of materials be closer than 18" to sprinkler heads.
  - Aisle widths in high rack storage, which require the use of mechanical devices such as forklifts or carts, will be of sufficient width to allow personnel evacuation if a cart is in the aisle.
- d. Hazardous Materials Storage – Hazardous products may produce a substantial amount of toxic vapors as well as react with a fire to create a fast moving or explosive situation. Storage of such materials must be strictly controlled.
- The Environmental Health and Safety Office will determine proper storage and handling of these materials.
  - Hazardous materials will not be stored within 50 feet of any open flame or heat source.
  - Hazardous materials will not obstruct evacuation routes or be stored under stairs.
  - Smoking is not permitted within 50 feet of hazardous materials storage.
  - Hazardous materials will be stored in separate cabinets or rooms according to their reactive properties.

## **7. Fire Detection, Alarms, and Suppression Systems**

DFES is responsible to ensure installed fire detection/suppression systems are working. DFES is also responsible for determining the requirements of type and location. It is the occupants' responsibility to be aware of the type of system in the building and how to react to an alarm.

- a. Tampering – Installed systems will not be tampered with in any way. Tampering is considered a criminal act by NFPA standards and in accordance with New Mexico Criminal Statute 30-7-22. Tampering is considered to be:
  - Any intentional or malicious activation of a system when there is no emergency;
  - The intentional deactivation of a system either by disconnecting, breaking or removing devices, wiring, etc;
  - Falsely reporting the activation of a system.
- b. Obstructing – No part of the system may be obstructed at any time. Obstruction includes:
  - Fire alarm pull stations must have a two (2) foot clearance in all directions of fire alarm pull stations;
  - Fire alarm bells/horns/strobes may not be visually blocked or muffled.
  - Smoke/heat/beam detectors may not be covered unless specifically authorized by DFES during renovations or special operations;
  - Storage may not come within 18" of sprinkler heads;
  - Renovations that affect the operation of any system must be approved by DFES;
  - Nothing may be hung from or wrapped around any system device or piping; and/or
  - Fire department connections must not be obstructed at any time.
- c. False Alarm (accidental activation) – Any operation that would/could activate the system must be coordinated with DFES and the NMSU Information and Communications Technologies alarm technicians. Such operations include but are not restricted to:
  - Welding or other heat producing work around sprinklers and/or heat detectors;
  - Sanding or other work around smoke detectors that would create a dust;
  - Use of smoke producing devices that could set off smoke detectors;
  - Steam cleaning or spray painting that could set off detectors; and/or
  - Use of open flames near any heat or smoke-sensing device;
- d. Testing – Only authorized NMSU Information and Communications Technologies alarm technicians, or their designated contractor, may conduct testing, maintenance or repair of systems.
- e. All installed fire alarm systems shall be required to report their system status at the centrally located fire alarm receiving station monitored at the NMSU Police Department Dispatch Center.

## 8. Open Burning

Open burning is defined as any open/exposed flame, whether indoors or outdoors, which could cause a potential fire hazard (i.e. bonfires, campfires, leaf burning, artwork involving flames, pyrotechnics of any kind, etc.).

- a. Approvals: Open burning on any NMSU property must be approved in writing by DFES.
- b. Open Burning Indoors is prohibited.
- c. Open Burning Outdoors - Open burning outdoors may be authorized under the following conditions:
  - A written request is sent to DFES two (2) weeks in advance of the event or operation;
  - The proposed burning will not endanger any adjacent building, vehicles or vegetation;
  - The burn location will not block access for emergency vehicles to any building, street or emergency device;
  - Open flame fires will not be within 50 feet of any flammable storage area (the distance may be increased according to the size of the event), and 25 feet of any building, vehicle or vegetation;
  - The event coordinator provides a Fire Guard as required by DFES;
  - The event coordinator will contact DFES, Campus Police, and occupants of adjacent buildings 24 hours in advance of the event or operation for final coordination;
  - The event coordinator of the open burning will be responsible for complete extinguishment and removal of all materials used in the open burning;
  - A 5 to 30-minute watch will be made (as determined by DFES) to ensure there is no residual heat left in the material;
  - All requirements of the New Mexico Environmental Department are met; and/or
  - Agricultural and/or weed control by burning is prohibited.
- d. Pyrotechnics – Pyrotechnics displays will be coordinated through DFES and authorized under the following conditions:
  - A written request is sent to DFES two (2) weeks in advance of the event.
  - The individual handling the pyrotechnics must be a licensed handler of the material to be used and shall be responsible for the proper storage, handling, transportation, use and disposal of the materials, and must obtain a permit from DFES.
  - The individual handling the pyrotechnics must submit a written proposal to DFES two (2) weeks in advance of the event for review. The proposal must include the type of display, type and amount of materials to be used,

current certification by a recognized agency, proof of insurance, and method of transportation and storage.

- The event coordinator must provide a Fire Guard (as determined by DFES) for the length of time that the material is handled.
- Requirements noted in outdoor/indoor sections may also apply.
- Further detailed requirements will be made available through coordination with DFES.
- Consumer fireworks are prohibited on campus.

## **9. Welding Safety Program**

Refer to Welding, Cutting, and Burning program. (Hot Work) Appendix B

## **10. Parking, Fire Lanes and Emergency Access**

In the event of a fire emergency, it is critical that emergency responders have access to the building or location of the emergency. Fire lanes and emergency access routes have been provided for this purpose.

1. Fire Lanes – Fire lanes (normally marked in red on the curb) must not be blocked at any time. This includes temporary parking for the purpose of just dropping something off (NM Statute 66-7-351).
2. Parking – Vehicles must not park on malls, or in front of any facility in such a way that it will prevent emergency responders from reaching the building. Parking is prohibited inside any building (NMSU Parking and Traffic Regulation). Gasoline or diesel fuel fired vehicles of any kind or size are prohibited inside any building.
3. Emergency Access – Fire hydrants, fire department connections, or other emergency equipment must not be obstructed at any time. Parking is prohibited within 15 feet of a fire hydrant or other fire department connection.
4. Emergency Vehicle Response – All vehicles will, when an emergency vehicle approaches from any direction, immediately pull over to the right side of the road to allow the vehicle to pass.

## **11. Fire/Smoke Rated Doors**

Fire and smoke rated doors are equipped with a self-closing device and are installed to keep fire from spreading throughout a building.

Blocking doors – Blocking fire doors open allows smoke and fire with an uncontrolled avenue through the building.

- Fire/smoke rated doors will not be blocked open.
- The self-closing devices may not be disconnected or rendered inoperable.
- For special reasons that the door must be held open for movement of furniture equipment or other large size or number of items, the person

responsible for the move will provide an individual at the door to ensure the door is not left open if the building is evacuated.

- "Door chocks" or "foot stops" may not be installed on any fire rated door. Furniture, appliances, etc. may not be used to block the door open.
- Doors that need to be left open for high traffic areas or for visual security may be authorized by DFES. If authorized, the door will require an automatic magnetic release device installed which will release the door when any emergency alarm device is activated.
- Obstructions that will prohibit fire/smoke rated doors from closing and latching without human intervention are not permitted.

## **12. Corridors, Egress Routes, Exit Doors**

In an emergency, one of the most important requirements is to ensure that all occupants can leave the building safely. To accommodate this, corridors, hallways and exits are designed and constructed to allow people to leave the building in the safest and quickest way possible.

### **a. Obstructions:**

- No corridor, aisle way or component of a means of egress may be obstructed. Furniture in lobbies must not obstruct the minimum width of egress, and must be arranged so there is a direct path through the lobby to the exit.
- Wires, cables or extension cords may not be laid across corridors, aisles or pathways.
- Exit doors must remain unlocked during hours in which the building is occupied. All special locking devices must be approved by DFES.

### **b. Minimum Widths:**

- Minimum widths (which must be increased accordingly with the number of occupants) range from 18" between desks to 44" for corridors to several feet wide for buildings with large crowds.
- Furniture, artwork, wall hangings, statues, etc., which protrude from the walls may not obstruct the minimum width nor present a tripping or other safety hazard.
- Minimum aisle widths must be maintained at all times.

### **c. Protrusions:**

- Minimum ceiling height in exit passageways is generally 7'6".
- Lights, decorations, signs or any other item hung from the ceiling generally may not be lower than 6'8".
- Wires or cables hung from the ceiling must not present a safety hazard, such as snagging equipment being transported through the corridor.

### **d. Items not permitted in corridors:**

- Flammable storage cabinets of any size;
- Compressed gas bottles of any size;
- Carts, cabinets, shelves or other items on which combustibles or flammables are likely to be stored;
- Chemicals, munitions, pyrotechnics or any other hazardous material;
- Any item that will impede on the normal or emergency flow of traffic or will obstruct any emergency device;
- Portable heaters, coffee pots, food warmers, or other devices that may present a hazard;
- Unprotected high voltage, electrical or gas powered equipment of any kind.

### **13. Fire Extinguishers**

The number of recorded disastrous fires has been reduced over the years due to the increased awareness and knowledge of, and the use of, fire extinguishers. A fire extinguisher, used properly on a fire at its earliest stage could lessen the chance of injury to people and damage to property.

- a. Responsibility - DFES is responsible for the installation, tracking, and maintenance of fire extinguishers in NMSU Las Cruces I&G facilities. Extinguishers in leased and auxiliary facilities are the responsibility of the landlord. DFES will assist NMSU departments in leased facilities and Auxiliaries facilities in coordinating with the landlord.
- b. Types - The type of extinguisher made available is determined by DFES using the following factors:
  - The type of hazard (combustibles, flammables, electrical hazards, chemicals, etc.).
  - The amount of combustibles and/or flammables in the area.
  - The best agent to be used on the hazard(s) (i.e., water, dry chemical, carbon dioxide, or other agent).
- c. Location – The location of the extinguisher will be determined by DFES.
  - The extinguisher will be located at or near the exits in the normal path of travel to the exit.
  - The travel distance to reach an extinguisher will be no further than 75 feet.
  - The extinguisher will normally be clearly visible and identifiable. When this is not possible, appropriate signage will be posted directing the occupant to the location.
  - The extinguisher must remain located in its designated location. Do not remove the extinguisher for use as a doorstop, to cover a welding operation, for a barbecue, etc.
  - The extinguisher must not be hung higher than five (5) feet from the floor or lower than four (4) inches off the floor.

- d. Inspection - Extinguishers must be inspected periodically. The building monitor or designated person should check each extinguisher visually at least once per month. This check will include:
- Ensuring the extinguisher is at its designated location;
  - Checking the pressure on the gauge (tamper seal on CO<sub>2</sub> extinguishers);
  - Checking to see that the safety pin is in place and sealed;
  - Checking the extinguisher for any obvious physical damage;
  - Documentation that the checks were completed.
- e. Maintenance - DFES will conduct periodic maintenance and testing of all fire extinguishers. This includes:
- Annual inspection;
  - Hydrostatic testing on a periodic basis (5-12 year cycles);
  - Repair of damaged extinguishers;
  - Recharging of extinguishers; and/or
  - Replacement of unusable extinguishers.
- f. Misuse of Extinguishers - The following will be considered tampering/vandalism:
- Discharging an extinguisher for any reason other than extinguishment of a fire;
  - Relocating an extinguisher without specific approval of DFES; and/or
  - Damaging any part of the extinguisher intentionally or accidentally through carelessness.
- g. Operation of extinguishers -- Proper training is required in this area. There are four basic steps to using an extinguisher. The acronym PASS is used:
- **P**ull the safety pin from the handle. Break the plastic seal.
  - **A**im the extinguisher at the base of the flame.
  - **S**queeze the handle all the way down to release the agent.
  - **S**weep the agent across the fire with a side-to-side motion. Be sure to cover the entire fire. See section D-1 of the Fire Emergency Action and Evacuation Program, General Procedures, for specific instructions on fire extinguisher use.
- h. Reporting discharged or damaged extinguishers - Never put an extinguisher back in its place after extinguishing a fire. If an extinguisher has been discharged (even for only a few seconds), if the seal has been broken, or if it is damaged in any way, report the extinguisher's location to DFES *IMMEDIATELY*.

**14. Firefighting** - There is no code, standard, policy, state law or other legal document that states that a person discovering a fire is legally bound to attempt to extinguish it. However, in most cases, when a fire is discovered, it is usually in its incipient stage and can be easily extinguished. It is highly recommended that this be considered when a fire

is discovered. The following is a brief way to decide when to attempt extinguishment. The key to this is proper training.

a. *Fight the fire if:*

- The building occupants have already been notified to evacuate and the campus Fire Department has been notified of the emergency (by calling 911);
- The fire is small enough to be extinguished with a portable extinguisher;
- You have a clear path to the exit;
- Someone knows you are attempting to extinguish the fire;
- You have been trained in the use of a fire extinguisher.

b. *Do not fight the fire if:*

- The fire appears to be too large to extinguish with one attempt;
- You must pass through the smoke to reach the fire;
- You must shield yourself to reach the fire;
- The fire could cut off your path of egress;
- You think there may be explosive, reactive or toxic products burning;
- You have not been properly trained to extinguish the fire.

**15. Interior Finishes and Decorations** – Interior decorations are a common factor in the spread of fire. Decorations used during the holiday seasons are always a large concern. It is necessary to ensure that all decorations used meet the requirements of safety and fire resistance.

a. Interior Finish – The following are requirements to consider when planning a renovation or refinish of walls, ceilings, and floors:

- Authorization for new material must meet the minimum requirements of NFPA fire rating standards. DFES is available to assist in determining the fire rating of a material.
- Finish materials in corridors, places of public assembly and high hazard areas will use "Class A" materials. This is the highest protection rating dealing with the flame spread and smoke production of a product or material. There is no such thing as "fire proof."
- Offices, sleeping rooms and less hazardous areas may use a "Class B" finish.
- "Class C" materials are not permitted at NMSU. Class C is the lowest rating in safety, and these materials could ignite easily and fire may spread rapidly.

b. Approvals – Normally, specific written approvals for holiday decorations will not be required. Written approval will be required if the decorations may interfere with any safety system or may conflict with one or more of the safety requirements in this program.

c. Documentation – Any decoration (whether purchased from a store, dealer, catalog or other business, or if handmade) will require documentation acceptable to the AHJ that materials used meet the fire safety standards of fire resistance and safety.

- d. Materials (fire resistance) – All materials used in decorations must meet the minimum requirements of NFPA 701, Standard Methods of Fire Tests for Flame Resistant Textiles and Films. DFES will provide the specific requirements on request. It is recommended that if in doubt, you should contact DFES for consultation prior to purchasing or installing decorations. General requirements include:
- Vegetation such as haystacks, leaves, branches, large amounts of plant cuttings, etc., will not be used in or around any building unless approved by DFES, and documentation of adequate fire resistance is provided in advance of using the material.
  - Cut Christmas trees will not be used in any facility except family housing units.
  - Decorations must not be attached to, hung from, or obstruct any emergency device such as exit lighting, sprinkler heads, etc.
  - Combustible decorations must not be hung from ceilings in such a way that a fire could ignite the decorations and endanger the occupants before evacuation.
  - Unauthorized items found during inspections will be required to be removed.
- e. Candles – Candles are prohibited except for religious, dining or ceremonial purposes inside buildings **ONLY** under the following conditions:
- Candles must be in containers that will resist tipping over;
  - The container, if tipped, must be capable of containing the entire candle, dripping wax, and any convected heat within it;
  - The candle may not be used within three feet of combustible materials. The exception is on table displays where the candle is in an approved container one (1) foot from combustible materials; the display must be supervised;
  - Whenever candles are lit, a person must be in attendance wherever they are used. All candles must be extinguished at the end of the event;
  - Candles must not be used in close proximity to heat or smoke detectors or sprinkler heads in such a way that the heat or smoke may activate the device.
- NOTE: The use of candles in University-owned residence areas (i.e., residence halls, dormitories, fraternity houses and sorority houses) is prohibited.**
- f. Electrical – Electrical lights, decorations, and cords shall comply with the following conditions:
- Be tested and approved by a recognized testing laboratory such as Underwriters' Laboratory (UL) or Factory Mutual (FM). The device must bear the appropriate label, sticker, or flag supplied by the manufacturer;
  - Electrical decorations or cords may not be used on combustible vegetation, dry trees, curtains, or any other combustible material that may be ignited by heat or potential electrical short of the device;

- Extension cords used for temporary use in decorations are limited to 90 days. The cords must be one length from the device to the electrical outlet;
  - Multiple electrical devices may be plugged into an approved “bar outlet” which incorporates a breaker, on/off switch, is surge protected, and can reach the outlet without another connection to another surge protector or an extension cord. Heat-producing devices must be plugged directly into an outlet;
  - Electrical decorations must be turned off and should be unplugged at the end of the day;
  - Electrical decorations or cords must not be laid or taped across floors in such a way that they may cause a tripping hazard or interfere in any way with an evacuation; and/or
  - Any electrical decoration or cord that is damaged, worn, showing signs of overheating, etc., must be taken out of service and repaired or replaced.
- g. Amount of Decorations - This program does not specifically limit the use of decorations; a general rule of thumb by the Life Safety Code limits combustible material to 10% of the existing wall surface of an area. The amount of decorations used will be limited by the following criteria:
- Decorations may not obstruct any common exit or sidewalk.
  - Decorations must not exceed the amount of combustibles that could be contained by any existing extinguishing system or quickly brought under control with a fire extinguisher.
  - In the judgment of DFES, the amount of combustibles would aid in the rapid spread of fire such that it could endanger or entrap the occupants.
  - The amount of decorations may affect the occupant load of the area if such decorations cover any required floor area used in the calculation of the occupant load.
- h. Luminarias - Under the following conditions, luminarias are permitted for use both in the electrical and candle versions.
- Candle-type luminarias will not be used indoors.
  - Electric luminarias may be used according to the requirements of paragraph 15-F.
  - Candle and/or electrical luminarias are permitted outdoors.
  - Candle luminarias must be in an approved luminarias bag with at least 2" of sand (or similar non-combustible material) in the bottom of the bag. The candle must be of a size that will allow adequate space between the candle and bag so as not to ignite the bag.
  - Candle luminarias will not be placed within five (5) feet of combustible material, such as leaves or paper decorations.
  - An individual will be designated to supervise, control, and manage the luminarias, and ensure that they are properly extinguished and properly discarded.

- Candles must be extinguished at the end of the night or event unless the area is supervised.
- Electrical luminarias must be rated for outdoor use.
- Electrical cords and extension cords will not be placed so as to cause a tripping or fire hazard (i.e., frayed or unrated cords running along a path of dry leaves).

**16. Nightly Closing Checks** - It is important to ensure that when you leave for the day or shift, no potential fire hazard is left behind. The following is a short list of common items that should be checked before leaving the facility.

a. Electrical Items

- Unplug all heat-producing devices such as coffee pots, toasters, heaters, etc.
- Turn off all electrical equipment that does not require continuous power, such as computers, radios, televisions, lab equipment, fans, power equipment in maintenance shops, etc.
- Ensure that equipment that require continuous power are not warm to the touch.
- Turn off all unnecessary lighting. If lighting is required for security, ensure that no combustibles are stored near or attached to the lighting.

b. Trash

- Ensure that all trashcans are emptied regularly so trash does not overflow.

c. Heaters and other Open Burning Materials

- Ensure that all floor and space heaters are unplugged as noted in Section A above, and combustibles should not be stored within two (2) feet of vents.
- Ensure that any candles, holiday decorations or other such materials are extinguished, turned off, or unplugged as necessary.

d. Cooking Equipment

- If provided, ensure that all stoves, deep fat fryers, and other heat type cooking equipment are turned off.
- If approved, ensure that portable cooking equipment, such as a hotplate or food warmer, are unplugged.

**17. Heaters** – One of the most common causes of fires are unattended heaters and combustibles too close to a heat source. The following are requirements dealing with the authorized use of portable heaters at NMSU.

*Type of heater* – The following guidelines must be followed:

- The heater must be UL or FM-tested and incorporate a tip-over switch, which will turn off the heating element and fan if the unit is knocked over.

- The heater must be in good repair and have a cord long enough to reach the electrical outlet. Extension cords must not be used.
- The heater must be unplugged at the end of the workday or if the building will be unattended for an extended period.
- The heater must not be placed within three (3) feet of combustible materials.

**18. Prohibited Appliance:** The Consumer Product Safety Commission has issued a warning to consumers about the use of tubular light bulbs in most torch-ere-style halogen lamps. The lamps can reach a very high temperature and easily ignite any combustible materials the lamp might come into contact with. Therefore, the risk posed by the use of a halogen lamp warrants prohibiting their use any where on campus. If you are not sure whether your lamp is this type, contact the DFES for an evaluation.

## Appendix A

### FIRE EMERGENCY ACTION AND EVACUATION PROGRAM

This program contains requirements for general and specific fire evacuation plans which are designed and implemented to protect University employees, students, visitors and contractors from the hazards associated with a fire-related emergency which may occur on University property.

#### A. SCOPE

This program is applicable to all University faculty, staff, students, visitors and/or contractors that become aware of a fire-related emergency as defined below.

#### B. DEFINITIONS

**Area of refuge** – A specified room, area or stairway, which has been designed to withstand the passage of smoke or fire for a required time period. Such a room should have a two-way communication device to call for help.

**Fire evacuation plan** – A written plan, specific to the facility, which provides guidelines and requirements for the safe evacuation of all occupants and reporting of an emergency situation.

**Fire-related emergency** – Any unusual situation that may cause an immediate fire or the hazardous products of fire, which in turn will create an unsafe environment. Such examples of a fire emergency are:

- The smell of smoke (regardless of how small an amount).
- The sight of smoke (regardless of how small an amount).
- The smell of gas or other hazardous chemical.
- Electrical equipment that is sparking.
- Any fire, regardless of how small, even if it has already been extinguished.

**Evacuation diagram** - A pictorial drawing of the building layout, showing the closest evacuation route from any point in the building.

**Fire alarm pull station** - A device, normally placed at or near the exits, that when activated will sound a general alarm throughout the building. This alarm signifies that all occupants must leave the building at the most direct and safe route when activated.

#### C. FIRE EVACUATION PLAN REQUIREMENTS

*NOTE: When in doubt of your safety or the safety of others, evacuate and report the emergency.*

Emergency Action Plan (Evacuation Plan)

1. Each NMSU department (or organization unit) shall establish an Emergency Action Plan for employees within departmental work areas. For those areas with chemical laboratories, this plan is also required as a component of the Chemical Hygiene Plan.
2. A review of the departmental Emergency Action Plan will be completed annually by the respective department. Each department shall report their information to EH&S [http://nmsu.edu/~safety/policies/policy\\_emergency\\_action\\_plan.htm](http://nmsu.edu/~safety/policies/policy_emergency_action_plan.htm)  
The plan will be reviewed on an annual basis to update or remove any item, which may require modification due to changes in the occupancy, construction, use of the space, or other changes that would invalidate the plan.
3. In order to comply with OSHA regulations (reference 29CFR1910.38) on Emergency Action Plans, each department must establish, document and/or be able to provide the following:
  - a. Emergency escape procedures from the department/building work areas. Design and post informative diagrams directing personnel to the emergency exits.
  - b. Emergency shutdown procedures for critical equipment. Personnel must be identified and thoroughly trained to complete the emergency shutdown.
  - c. Provide a means for rapid communications to the departmental employees in the building (sweepers, runners, phone tree, PA system, etc) and a way to account for all personnel at a specified safe assembly location.
  - d. Identify, document, and train the designated personnel assigned medical and rescue duties. For the NMSU main campus the existing 911 emergency plan of the campus police and fire departments may be designated. DFES is the EMS provider for the campus. For other NMSU locations with city services, the local police, fire and medical services, if available, will meet this requirement.
  - e. Designate, record and post the proper methods for reporting emergencies.
    1. Identify the proper protocol for coordinating the evacuation of multiple departments from a single building.
    2. Identify the departmental Emergency Action Coordinator and an alternate to supervise emergency evacuations and other procedures.
    3. Designate one individual (possibly the Building Monitor) and an alternate to coordinate reports verifying all personnel have been evacuated from the building.
    4. The names and job titles of the Emergency Action Coordinator responsible for the emergency action plan and the Building Monitor shall be posted for public information.

5. Each facility shall have a written evacuation plan. This plan will be made available to all staff, employees, contractors, students, etc. The plan shall define the procedures to take in an emergency. Residence halls, residential student housing, and fraternities shall, in addition to the written plan, develop and maintain a pictorial fire evacuation plan posted in conspicuous areas within each resident's living/sleeping area. The plan shall be posted on the inside of the door to each living area, dorm room, and common areas. The plan shall not be posted higher than 5.5 feet from the bottom of the door.
6. Each full-time and part-time individual who works at the facility shall be trained on the plan when they are first hired and periodically thereafter (at least once per year and more often as deemed necessary by the hazards associated with the building). Training will include evacuation routes, location of fire extinguishers and fire alarm pull stations, procedures for evacuation of students, patrons, patients, etc., and fire reporting procedures and special operational procedures needed to shut down, secure, or make safe certain critical equipment.
7. The plan will include a pictorial diagram of the facility (if required, as noted in Paragraph 1) to show routes to be taken from any point in the facility. This should be done by highlighting routes with dotted lines, color-coded lines, etc. which terminate at the nearest exit. Two (2) evacuation routes must be shown for any area in the facility.
8. The plan will state that employees and staff are responsible for evacuation of the general public. Procedures will specify responsibilities for employees when dealing with evacuation of handicapped or other persons with special needs.
9. The plan will include the location of fire extinguishers. Each staff member should know the location of the two (2) nearest extinguishers in relation to their work area.
10. The plan will state the procedures for responding to and reporting a fire (see section D below). In most cases, the plan will be general enough to cover all concerns. Where there are special hazards, the plan will include the appropriate procedures specific to each hazard.

#### **D. GENERAL PROCEDURES**

All situations that may cause a fire will be considered an emergency. This includes any fire that has already been extinguished, regardless of the size or nature of the fire. When a fire-related emergency is discovered, the following actions must be taken:

1. When noticing a fire-related emergency, be it the sight or smell of smoke, any electrical equipment sparking, or the assumption that there may be a fire-related emergency, the individual noting the emergency must evacuate the immediate area and initiate the following procedures. A method of remembering the procedure of responding to a fire is the use of the acronym A.C.T.S. Use this acronym for general fire response and evacuation procedures. This acronym can be used as a training aid for faculty, staff and students.

- **Alert** people from the immediate area should pull the fire alarm pull station(if available).
- **Contact** the Department of Fire and Emergency Services by calling 911 from a phone in a safe area.
- **Try** to extinguish small fires. *Do not attempt to extinguish large fires*
- **Show** or provide information to the firefighters as they arrive.

The following is a detailed look at the acronym A.C.T.S.:

**Alert** people in the immediate area if trained and it's safe to do so and pull the fire alarm. As you are evacuating, close the doors behind you to limit the spread of the fire.

The individual noting the emergency, or the person who has been designated, will activate the nearest fire alarm pull station. (Should the alarm not function, a verbal evacuation procedure must be activated. This is commonly done via a public address system or by calling out "FIRE, FIRE, FIRE!")

**Contact** the Department of Fire and Emergency Services (DFES) by dialing 911 to report the emergency. The call should be placed from a safe location.

The individual noting the emergency, or the person who has been designated, will call 911 for emergency responders. The call must be made from a safe location.

The person calling must inform the dispatcher of the building name, number, and/or street address, if known. Additional information should include:

- Type of emergency (smoke, fire, electrical arcing, vehicle accident, smell of gas, etc.);
- If there are any known persons who cannot evacuate on his/her own for whatever reason;
- If the fire is spreading, contained;
- Has it been extinguished;
- If fire alarms are sounding;
- If the sprinkler system has been activated.

Provide any other information about the fire that would help emergency responders, such as:

- Color of smoke;
- What started the fire, if known;
- Any known injuries;
- Any suspicious people or objects in the area of the emergency, or any other information that you feel would be helpful.

**Try** to extinguish the fire if you have been trained and the fire is small. *Do not try to extinguish large fires.* If any of the following conditions exist, do not attempt to fight the fire if:

- The fire is too large for an extinguisher to handle (this is a judgment call).
- The heat of the fire is such that you cannot get close enough to use the extinguisher safely without inhaling any smoke.
- There is not an emergency escape route available. Do not allow the fire to get between you and your escape route.

A method of remembering the procedures for using fire extinguishers is the acronym **P.A.S.S.**

**P**ull the pin.

**A**im at the base.

**S**queeze the discharge handle.

**S**weep the agent across the fire.

**Pull the pin from the extinguisher handle. Twist the pin to break the plastic seal and pull the pin out.**

The extinguisher will not operate with the pin in the handle. The pin is used to keep the extinguisher from being accidentally discharged.

**Aim at the base of the fire.**

Point the nozzle towards the base of the fire. Discharging agent at the flames in the air seldom extinguishes the material on fire. When you are not sure where this is, aim at the most intense part of the flames.

**Squeeze the discharge handle to release the agent**

Short bursts of agent can be used to extinguish small fires. Short bursts, rather than discharging the entire extinguisher for a small fire, can prevent the clean up of excess agent afterwards.

**Sweep the extinguisher agent from side to side, across the base of the fire.**

It is important to sweep the agent across the base of the fire to insure proper agent distribution until the fire is out. Discharging agent without sweeping it across the fire can in some cases spread the fire.

- Everyone should be trained in the use of extinguishers.
- Always stand at least 5-8 feet back from the fire before discharging an extinguisher.
- Fight the fire only as long as it is safe to do so.

**Show** or provide information to the firefighters as they arrive. Information should include the type of emergency, what's on fire, is everyone out of the building.

An individual who is knowledgeable of the situation should be designated to stand outside and advise the first arriving emergency responder of the location and current situation regarding the emergency.

- When evacuating, it is best to close all doors on your way out. Do not lock them except under security-required conditions. The fire department may have to forcibly open the door to check for fire spread. Closing doors will aid in containing the fire to a smaller area.
- Turn off any gas, oxygen or other valve, which may control a hazardous substance, if it is safe to do so.
- Secure all fire doors leading to rooms with high value items.

**NOTE: Calling 911 from any NMSU phone (645 or 646) will dial the NMSU Campus Police. Calling 911 from a non-NMSU (527, pay phone, or cell phone) will dial the Mesilla Valley Regional Dispatch Center (MVRDA) who will then notify the NMSU Department of Fire and Emergency Services.**

Attempt to extinguish the fire with the nearest appropriate type of fire extinguisher if it is safe to do so without personal injury and the fire is small enough. It is highly recommended that a "buddy system" be used when fighting fires.

2. Additional procedures to follow in an emergency are:

When the building has been evacuated, do not allow anyone to reenter until directed by the responding emergency personnel. The only agencies authorized to allow re-entry are the Senior Fire Officer on scene.

Plans should be developed and modified as necessary to include the shut down or securing of any critical equipment, experiments, cash drawers, high value items, etc. The plan shall state that this may be done **ONLY** in cases where time and safety permits. Such procedures include, but are not limited to:

Securing all cash drawers, either by locking them or taking the drawer with you. Have at least one other individual with you during the evacuation for security. Notify the first Campus Police Officer to arrive on the scene that you have high value items. This does not include personal items such as purses, jewelry, etc.

3. Do not spend time collecting papers or personal items or wait for others who are doing so, or go back into the building once you have evacuated because you forgot something.
4. Do not try to evacuate through smoke or fire. Use a second exit or an area of refuge until assistance can arrive.
5. Develop a location for all occupants to meet outside. This area should be away from the building, not in the path of emergency vehicles or blocking access to emergency

equipment. When possible, take a count of all persons known to be in the building. Report any people missing to the first arriving emergency responder.

## **E. PROCEDURES FOR SPECIAL CONCERN AREAS**

(All procedures listed in Section C and D above apply, plus any of the following, if applicable.)

This section is directed at those facilities that have significant hazards specific to their operation. Coordination with DFES is highly encouraged in these facilities.

### **1. Laboratories**

Specific programs in the DFES office regulate chemical handling and spill response. This section deals specifically with chemicals when involved in a fire-related emergency. A combined spill and fire would entail a more serious hazard than either by itself.

- a. Procedures for the special handling of chemical spills must be developed with the understanding that the NMSU Fire Department's Hazardous Materials Response Team, in accordance with Hazardous Materials Operating Guidelines, should handle any spill determined to be more than simple.
- b. Spill response must be handled only by properly equipped and trained personnel to the appropriate level, by DFES or by an approved agency.
- c. All persons (instructors, staff, student, custodial, contractors, etc.) who may work in or around or may frequent a laboratory must be briefed on the emergency procedures for that type of area.
- d. A fire-related emergency within a lab or an adjacent area will require the immediate shut down of all gases, chemical experiments, or other hazardous operations.

*(EXCEPTION: A hazardous operation in which an immediate shutdown outside of normal procedures will cause an additional hazardous situation. Also, any operation/experiment in which shutting down will cause severe adverse effects/results to the experiment. Special procedures must be developed for securing the area/room. Where approved by DFES, Fire Guards may be posted.)*

- e. Fire Guards must understand that they must evacuate immediately when fire or smoke conditions impinge on their safety to the extent they cannot control the situation.
- f. Procedures will require that someone take note of the Fire Guard(s) and their location(s), and report this information to the first emergency responder.
- g. Special procedures should be developed for the handling and/or evacuation of laboratory animals. Special procedures may be initiated only if there is no immediate danger to the safety of humans.

## 2. Automotive and Parking Areas

- a. Standard evacuation procedures for staff and patrons apply.
- b. Evacuation procedures for vehicles must be developed and all personnel must be trained.
- c. Evacuation of vehicles from parking lots will be permitted ONLY if time and safety permit. Vehicles will not be moved through smoke or flame under any circumstances.
- d. Vehicles on lifts should be lowered if safe and possible to do so.
- e. Welding operations should be stopped and all valves shut off.
- f. Fuel dispensing systems must be shut off via the emergency shut off switch regardless of the fire location.

## 3. Residence Halls, Family Housing Units and Sorority/Fraternity Houses

All procedures in Section D apply. Additionally, special procedures must be developed:

- a. Each residence hall, housing unit, sorority and fraternity must develop an evacuation plan that requires the positive notification of each resident and visitors. This plan includes staff and/or residents who are designated to notify each room by knocking on the doors and calling out "FIRE, FIRE, FIRE" as you are leaving or exiting the building. This is to attempt to ensure that sleeping persons are awakened. This is done ONLY when safety and time permit. These persons are not expected to enter a smoke-filled corridor or housing unit to attempt evacuation.
- b. A designated individual or number of individuals should ensure that all evacuees report to a designated location to ensure an accounting of all known residents. Such duties would fall upon Residential Advisors, fraternity/sorority presidents or house managers, Housing Maintenance, or in the case of family housing, an adult member of the family.
- c. Due to the rapid spread of fire and smoke traditionally related to this type of occupancy, a selective evacuation is not permitted. The entire residence hall, fraternity house or connected housing group must be evacuated regardless of the size of fire.

## 4. Public Assembly Buildings

Public assembly buildings are defined as theaters, sports arenas, gymnasiums, classrooms, or any facility used for a public or private function of 50 people or more. The procedures in Section D, General Procedures, apply. Additionally, the following special considerations are required:

- a. Special procedures must be developed to evacuate patrons of public events quickly with minimum panic. In certain situations, an automatic evacuation delay system may be incorporated into the fire alarm panel. This system must be approved by DFES. The system must incorporate an alarm system, which is constantly manned and provides a silent warning delay of no more than two (2) minutes. This is required for crowds of more than 1,000 patrons.
- b. The procedures must include staff personnel who are trained in evacuation of large crowds. The Life Safety Code requires a provision of one (1) crowd manager for every 250 patrons. The procedures must be approved by DFES and all staff, including volunteers, must be trained on these procedures.
- c. Delay of evacuation will be permitted ONLY if the situation can be quickly brought under control and evacuation could cause an additional and unnecessary hazard. Delay of evacuation WILL NOT BE PERMITTED when used so as to not interrupt a performance or game, if a clear hazard to the patrons exists.
- d. Provisions for the mobility-impaired must be included in the written plan. The evacuation of able-bodied persons must not interfere with mobility-impaired patrons. Equally important, the evacuation of mobility-impaired patrons must not interfere with the normal flow of traffic. All patrons must have equal access to the exits.

#### 5. Child Care Centers

This section pertains to any facility used either permanently or temporarily for the purpose of providing short or long-term care for children, regardless of the number of children cared for. The procedures in Section D, General Procedures, apply. Additionally, the following special considerations are required:

- a. At no time during childcare would children be left without supervision by an adult trained in evacuation procedures.
- b. An appropriate number of adults will be on hand at all times to ensure safe evacuation of the children. It is recommended that this number be at least one adult for every 15 children over the age of 6 years; at least one adult for every 10 children between the ages of 3 - 5 years; at least one adult for every 5 infants from newborn to age 2.
- c. Special carrying devices or evacuation cribs will be on hand, and staff must be trained in the proper and safe method of transferring and evacuating all children to the evacuation cribs or carrying devices.
- d. The evacuation plan will include notification of all parents from a safe phone.
- e. The evacuation plan will include transferring the children to an alternate building location in case of inclement weather.

- f. The evacuation plan will ensure that children are not evacuated into a parking lot, to avoid possible injuries incurred from emergency response vehicles arriving at the scene.

**F. SPECIAL FUNCTIONS**

Any special function not covered above will be evaluated separately, and a specific fire evacuation and safety plan will be prepared for that function. The plan for special functions will be approved for that function only. It will be re-evaluated as necessary should the function occur on another occasion.

## Appendix B

### WELDING, CUTTING AND BURNING PROGRAM (Hot Work)

This safety program provides instruction and guidance on permits for safe gas and electrical cutting and welding operations, as well as other "Hot Work" conducted on properties under the jurisdiction of NMSU. This program complies with NFPA Standard 51B, 11 Fire Prevention in use of Cutting and Welding Processes," and OSHA 29 CFR 1910.251-257, subpart Q. This program supersedes any current University departmental procedures and shall be complied with by all faculty, staff and contract personnel.

#### A. SCOPE

The Welding, Cutting and Burning Program covers provisions to prevent the loss of life and property caused by fire during cutting and welding operations. This procedure applies to all faculty, staff or contract personnel who perform or are authorized to perform any welding, cutting, brazing or "Hot Work" at the University. All work involving welding, cutting, or brazing equipment shall be required to have an approved permit on site signed by an Authorized Fire Safety Representative.

#### B. DEFINITIONS

**Affected Personnel** - Includes all operators, supervisors and Fire Watch personnel

**Authorized Fire Safety Representative** - An individual who has been properly trained in accordance with NFPA 51B and OSHA 29 CFR 1910 on the safety aspects of welding hazards. This individual, who shall be designated in writing, is authorized to inspect welding sites and issue permits.

**Combustibles** - Gases, liquids or solid materials that will ignite in the continued presence of an ignition source.

**Hazardous Location** - An area, by nature, which presents an unsafe working condition that could result in a catastrophic ignition of material in the area. Such areas include:

- Explosive material use or storage areas.
- Highly toxic material use or storage areas.
- Flammable storage or handling areas.
- Confined Spaces.
- Any container which contains or has contained flammable or combustible liquids
- High angle work performed on scaffolding, roof or other location over 6 feet high in which a fall hazard exists.
- Any other area, which by nature of the material stored or used, could result in a fire or explosion due to the heat or sparks produced by the welding or cutting operation.

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

**Hot Work** - Work involving gas or electric welding, cutting, burning, brazing, soldering or similar flame or spark-producing operations.

**Fire Watch** - The process of observing an operation for any safety violations, maintaining a constant vigil for a fire caused by sparks or open flame during welding or cutting operations, and the responsibility for emergency extinguishment of any fire caused by the operation. The firewatcher shall not be assigned other duties during the operation and will continue the fire watch for 30 minutes or longer as necessary after the operation is completed.

**Operator** - The individual who actually conducts the welding operation. This person has been trained in welding operations and safety, and can provide documentation/certificates of the training by a recognized agency.

**Permit** (see Attachment A) - A checklist/tracking device used to authorize all Hot Work operations. An Authorized Fire Safety Representative shall issue permits on all Hot Work operations.

**Shielding** - A non-combustible material, such as a welding curtain or other means of placing a non-combustible barrier between the welding operation and any combustibles/flammables, or other materials with the propensity for burning.

**Welding** - A general term used to describe the joining of metal by fusing the pieces together utilizing heat. It often is used to describe brazing, cutting and soldering operations.

## **C. RESPONSIBILITIES**

1. The Department of Fire and Emergency Services (DFES), known as the “Authority Having Jurisdiction,” (AHJ) has jurisdictional authority over the University in compliance issues dealing with the scope of these operations.
2. The DFES has the overall responsibility of ensuring compliance with the Welding, Cutting, and Burning Permit program and the overall responsibility of implementing the guidance and technical expertise needed to oversee the program.
3. The dean, director, or department chair of each affected department shall have the overall responsibility of ensuring that all welding personnel are provided with the needed equipment and resources to conduct safe operations.
4. Office of Facilities and Services (OFS) supervisors and other university management or faculty who supervise students or staff using open flame devices shall be responsible for ensuring that all equipment is maintained in a safe operational manner. They shall also ensure that proper safety equipment, checklists, and training are made available to each worker involved in Hot Work operations. They shall have the overall responsibility to

ensure that the proper safety checklists are complied with and that proper notifications are made prior to start of work.

5. Personnel using open flame tools for cutting, welding, brazing or heat treating shall have the responsibility to comply with all safety checklists, ensure that their equipment is in proper working order, to ensure that the work site is made fire safe prior to start of work, and that the area is made fire safe prior to leaving the work area.
6. Any University department responsible for contracting with outside agencies to perform Hot Work shall have the responsibility to ensure that the contractors have a welding, cutting and burning program, or that they must comply with the provisions of this program.

#### **D. PERMITS**

1. All permits for operations by University personnel shall be issued by DFES or an Authorized Safety Representative. Permits for contractors shall only be issued by DFES.
2. Hot Work operations are permitted only in designated areas or in other areas determined to be safe by DFES.
3. The permit shall be issued in two parts:
  - a. Part one (white copy) shall be maintained at the work site for the length of the operation.
  - b. Part two (yellow copy) shall be forwarded to DFES immediately after issuance.
4. Permit numbers shall be controlled and issued by DFES.
5. Upon completion of the work, the operator shall sign part one of the permit verifying that the work area is fire safe. The permit shall be forwarded to DFES immediately after completion of work.
6. Permits shall be valid only for the time period noted on the form. Valid time periods are:
  - a. **Daily** –Valid from 8:00 a.m. to 8.00 a.m. (24 hours). This is issued with the assumption that one shift may work overtime to complete an emergency work order. If a new shift is to work on the same work order, a new checklist and permit must be completed.
  - b. **Extended** –Valid for a pre-determined period, normally for work up to six months.
  - c. **Permanent** –Valid for periods of six (6) months to one (1) year. Issued only to departments with specific daily operations.

- d. **Contractor** –Valid for length of contract. If a contractor has an existing welding, permit program that meets the same criteria as the University's, that permit may be used. The contractor shall coordinate the permit through DFES prior to start of work.

**NOTE: For extended, permanent and contractor permits, DFES may make periodic visits on a monthly basis to the work site to ensure compliance with safety requirements.**

7. Permits shall be issued only to trained/certified welding operators. Documentation of training/certification may be requested by DFES prior to issuance of a permit. Training/certification must be from a recognized agency.
8. Operators shall conduct a safety inspection in accordance with the Welding and Cutting Fire Safety Checklist and Permit (see Attachment A), and Welding Equipment Safety Checklist (see Attachment B). These checklists shall be signed by the operator and maintained on site during the length of the operation.

## **E. PROCEDURES**

1. OFS operators performing work shall coordinate work orders and permits through their respective Area Manager. Hot Work in hazardous locations must be coordinated with DFES.
2. NMSU academic departments (i.e., College of Arts and Sciences, Engineering, Chemistry, etc.) with Hot Work operations shall coordinate their permits through their Authorized Safety Representative.
3. Contractors conducting welding operations shall coordinate permits through the Contract Monitor, Project Manager, or Facility Planning of OFS as appropriate.
4. Operators should complete the Welding and Cutting Fire Safety Checklist prior to requesting a permit. This will expedite the process when DFES or a representative issues the permit.
5. The operator shall ensure that all notifications are made prior to start of work. This includes coordination with all departments, organizations and agencies that may be affected by the work. Work shall not proceed if the operation will cause additional safety concerns. Examples include, but are not limited to, operations that will:
  - Block exits in a public assembly or other populated building during an event;
  - Set off fire detection or suppression systems;
  - Cause unnecessary tripping hazards or potentially expose occupants to smoke, sparks or fumes;
  - Create a hazardous situation when performed in conjunction with another hazardous operation in the same area.

6. The operator shall ensure that all equipment used in the operation is in good working condition, that an appropriate fire extinguisher is on hand (all affected personnel must have annual fire extinguisher training), and that the permit is posted. He/she shall maintain a safe area throughout the operation. If at any time during the operation a hazardous condition is noted, the operation shall cease immediately until the hazard is resolved.
7. All personnel involved in the operation shall be fully briefed on the hazards involved, fire reporting procedures and evacuation procedures of the building. All fires shall be reported regardless of size or amount of damage. In the case that the fire alarm sounds due to an emergency in another part of the building, the operation shall be shut down and the operator(s) will evacuate the building.
8. Personal Protective Equipment (PPE) shall be worn during Hot Work operations. The type of work to be performed and the hazards present during the work will dictate the required PPE. A hazard assessment of the work will indicate the potential hazards and the necessary PPE. The University Safety Office can assist with these hazard assessments.

## **F. SPECIAL OPERATIONS**

1. **Confined Spaces:** Welding, cutting, brazing or hot work performed in confined spaces (as defined by OSHA 1910.146) presents, a special hazard in the way of ventilation, communication, access, evacuation and rescue. Special precautions must be taken to ensure the safety of all personnel entering a confined space. In addition to the standard checklist and hot work permit procedures, a confined space permit may be required. Contact the Environmental Health and Safety Office for more information.
2. **Hot Tapping:** In addition to standard safety precautions and permit, hot tapping operations shall be performed only by those individuals specifically trained in this type of work. Additional precautions include, but are not limited to:
  - Notification of the NMSU DFES;
  - Special evacuation procedures for exposures and occupants of adjacent buildings;
  - Shut down of utilities and or other operations in the area during hot tapping operations.
3. **Roofing or High Angle Operations:** This paragraph deals with welding operations conducted on roofs and high angle areas such as construction on multi-story structures where a fall hazard is present. Special precautions for fall protection and securing of equipment in case of an accident shall be implemented prior to start of work. When possible, the welding cart should be positioned remotely from the operation or special procedures put in place to shut down the equipment in case of an accident.

# WELDING, CUTTING AND BURNING FIRE SAFETY PERMIT AND CHECKLIST

## Attachment A

### SECTION 1                      COORDINATION

1. Area Manager	(area 1 2 3 4)	(Name:                      )	(#6                      )	_____
2. Occupational Safety	(Safety Office)	(Name:                      )	(#6                      )	_____
3. Building contact	(Notification)	(Name:                      )	(#6                      )	_____
4. Campus Alarms	(If affecting bldg.)	(Name:                      )	(#6                      )	_____

### SECTION 2                      PRIOR WORK CHECKLIST

6. Brief description of work done:			
7. Is the operation in a confined space? If yes, obtain Confined Space Permit.	Yes	No	
8. Are all welding lines in good condition?	Yes	No	
9. Is the welding cart placed so as to not block egress?	Yes	No	
10. Are welding/cutting cylinders (cart) secured?	Yes	No	
11. Is an adequate size/type of fire extinguisher in place (CO2, DC, Water)?	Yes	No	
12. Is the area free of combustibles (35 ft. in all directions)?	Yes	No	
13. Is the area free of flammable liquids or solids (50 ft. in all directions)?	Yes	No	
14. Is the area free of hazardous chemicals (50 ft. in all directions)?	Yes	No	
15. Is welding/cutting being done on hazardous piping (hot work)? If so, contact Safety Office for safety recommendations.	Yes	No	
16. Is the operation near any gas or high voltage lines? If so, make special arrangements for safety measures.	Yes	No	
17. Is the area adequately ventilated (to allow escape of smoke and gases to outside of building)?	Yes	No	
18. Are all possible avenues of smoke travel turned off/ cut off (to prevent travel of smoke into building)?	Yes	No	
19. Is work being done adjacent to combustible construction? If so, check item below:	Yes	No	
20. Are all required welding curtains in place?	Yes	No	
21. Has a fire watch been arranged?	Yes	No	
22. Will this operation create a tripping or other safety hazard? If so, contact Safety Office prior to start of work.	Yes	No	
23. Are any fire protection sprinkler or dry chemical systems in the immediate area that may be activated from the work? If so, take adequate precautions and contact the appropriate shop for coordination.	Yes	No	
24. Have all operator been briefed on fire reporting and evacuation procedures for the facility or area?	Yes	No	
25. Do all operators have adequate protective equipment on site and in use?	Yes	No	
26. Has the welding/cutting permit been properly filled out and signed by authorized personnel?	Yes	No	_____

**SECTION 3 AFTER WORK IS COMPLETED**

27. Has fire watch been accomplished (30 minutes after completion of operation, for hazardous areas)?	Yes	No
28. Have all systems, which may have been disconnected or shut down, been returned to normal operation? Contact appropriate department to ensure system has been restored to proper order.	Yes	No
29. Have the occupants been notified that the operation is complete?	Yes	No
30. Have all barriers and welding curtains been removed?	Yes	No
31. Has the welding permit been completed and filed with the appropriate department?	Yes	No

OPERATOR'S NAME (print) \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_ Time \_\_\_\_\_

## WELDING EQUIPMENT SAFETY CHECKLIST

### Attachment B

The following checklist is provided as a quick reference list for inspection of welding equipment and related accessories. The information is taken from OSHA 1910.125 Subpart Q on Welding Safety. It is a condensed version of the OSHA requirements and should not be construed as a complete listing. You are urged to consult the OSHA manual for complete information on welding safety.

*NOTE: Any leak, damaged part, or sign of pressure relief will be reason to delay or stop the operation and put the unit out of service until it can be repaired.*

ITEM	CONDITION	IN/OUT OF SVC.
<b>1. HOSES</b> - Cracking, spliced sections, fraying, burns, worn areas are cause to render the hose unsafe. - Hose connections to manifold are not corroded or damaged. - Hose is not long enough to maintain safe cylinder distance from welding operations.	GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__	( )/( ) DATE_____  ( )/( ) DATE_____  ( )/( ) DATE_____
<b>2. TAPING</b> - Tape for holding hoses together may not exceed 4" in every 12". Check for tape for "Item 1" condition.	GOOD__ FAIR__ POOR__	( )/( ) DATE_____
<b>3. CYLINDER</b> - Shall be legibly marked for contents - Must be stored upright and secured - Has inspector's name, test and pressure dates stamped - Free of dents, deformities and bulging - Threads are not damaged, worn, or corroded - Cap is in place when not in use; screws on easily; cap is not dented or damaged - Valve operates freely and is not corroded or damaged	GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__	( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____
<b>4. CART</b> - Upright stanchions are not corroded, bent or damaged - Cylinder-securing device (strap, chain, etc.) is in place; and not being used by other people - Fire extinguisher bracket is in place (w/ extinguisher) - Cart wheels are not flat, cracked, or damaged to the point that moving the cart is difficult or dangerous - Framing is in good condition (welds, bolts, corrosion)	GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__	( )/( ) DATE_____  ( )/( ) DATE_____ ( )/( ) DATE_____  ( )/( ) DATE_____ ( )/( ) DATE_____
<b>5. MANIFOLD</b> - Gauges are sealed, needles move freely and housing is not damaged - Gauges are properly seated and tight on the manifold - Gauges are tested every five years - Manifold pressure regulators move freely - Manifold threads are not damaged, worn, or corroded - Pressure relief valve is in place and not damaged	GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__	( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____ ( )/( ) DATE_____
<b>6. PROTECTIVE EQUIPMENT</b> - Eye and face protection and shields adequately cover the eyes, face, neck and ears from exposure to sparks, slag and heat. - Goggles are of the proper shade number - Skin protection (leathers) adequately cover the arms, wrists, legs, chest and neck from radiated UV rays - Glasses are tempered free from stria, air bubbles, cracks or other flaws. - Safety-toed shoes are in good repair.	GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__ GOOD__ FAIR__ POOR__  GOOD__ FAIR__ POOR__	( )/( ) DATE_____ ( )/( ) DATE_____  ( )/( ) DATE_____ ( )/( ) DATE_____  ( )/( ) DATE_____

