



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

**Revision Date  
November 2011**

# Fire and Life Safety Program



Environmental, Health and Safety Services  
Occupational Safety Division  
540-231-9068



## Fire and Life Safety Program

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# Revision Status

Contact(s)	Implementation Date	Revision Number	Comments
David Chaplin, CFPS, CFO University Fire Inspector (former)	January, 2000	1.0	Initial written program
Sandra F. Kulik, CSP, CFPS University Fire Safety Engineer (former)	May, 2001	2.0	Program revision and annual review.
Sandra F. Kulik, CSP, CFPS University Fire Safety Engineer (former)	August, 2002	3.0	Program revision and annual review.
Sandra F. Kulik, CSP, CFPS University Fire Safety Engineer (former)	May, 2005	4.0	Program revision and annual review.
Tolga Durak, MS, CSP, CFPS, CBO, CFO Fire Engineering & Life Safety Programs Coordinator	December, 2006	5.0	Program revision and annual review.
Tolga Durak, MS, CSP, CFPS, CBO, CFO Fire Engineering & Life Safety Programs Coordinator	December, 2007	6.0	Program revision and annual review.
Rob Lowe, PE Web Coordinator	June, 2009	6.b	Spelling and formatting corrections for web.
Tolga Durak, PE, CSP, CFPS, CBO, CFO Fire Engineering & Life Safety Programs Coordinator	January, 2011	7.0	Program revision and annual review.
Tolga Durak, PE, CSP, CFPS, CBO, CFO Fire Engineering & Life Safety Programs Coordinator	November, 2011	8.0	Program revision and annual review.

# FIRE AND LIFE SAFETY PROGRAM

## TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	1
Purpose .....	1
Application .....	1
Scope.....	1
<b>RESPONSIBILITIES</b> .....	1
Employer.....	1
Departments .....	1
Supervisors.....	2
Employees and Students.....	2
Contractors .....	2
<b>FIRE EMERGENCY ACTION PLANNING</b> .....	3
Responding to a Fire Emergency .....	3
Intentional False Alarms .....	3
Fire Evacuation Planning.....	4
Fire Prevention Plans .....	5
<b>FIRE DRILLS</b> .....	5
<b>PUBLIC ASSEMBLY OCCUPANCIES</b> .....	6
<b>MEANS OF EGRESS (EXITING)</b> .....	7
Occupant Load .....	7
Egress Requirements .....	7
<b>FIRE PREVENTION</b> .....	9
Identifying Common Fire Hazards .....	9
Basic Fire Prevention Requirements .....	10
Interior Finishes and Decorations .....	11
Fire-Rated Doors and Fire-Resistant Barriers .....	13
Electrical Hazards.....	14
Hazardous Chemicals.....	15
Compressed Gas Containers, Cylinders and Tanks.....	20
Building and Renovating Space.....	23
Miscellaneous Requirements.....	23
<b>FIRE PROTECTION SYSTEMS</b> .....	25
Building Fire Alarms Systems.....	25
<b>PERMITS</b> .....	26
Hot Work Permits.....	26
Open Flames and Burning Permits.....	27
Pyrotechnics/Fireworks Permits .....	28
Temporary Facilities, Tents and Stages .....	29
Special Effects Permits.....	30

**FIRE INSPECTIONS**.....31

**FIRE AND LIFE SAFETY TRAINING PROGRAMS**.....32

    Fire and Life Safety Training.....32

    Fire Prevention Planning Training .....33

    Public Assembly Emergency Procedures - Training for Employees and Volunteers .....33

    Portable Fire Extinguishers Training.....33

**REFERENCES AND RESOURCES** .....35

**APPENDIX A (FIRE DRILL REPORT FORM)** .....37

**APPENDIX B (FIRE PREVENTION PLAN TEMPLATE)** .....40

**APPENDIX C (EXAMPLE OF A HOT WORK PERMIT)** .....44

**APPENDIX D (EXAMPLE OF AN OPEN FLAME AND BURN PERMIT APPLICATION)**.....46

**APPENDIX E (TENT/TEMPORARY STRUCTURE FIRE INSPECTION FORM)** .....50

**APPENDIX F (SPECIAL EFFECTS PERMIT)**.....53

**APPENDIX G (PLANNING AND MANAGEMENT GUIDE FOR PUBLIC ASSEMBLY EVENTS)**.....56

**INDEX** .....64

## **Introduction**

### **Purpose**

The Fire and Life Safety Program contains policies and procedures that, when implemented and maintained, will satisfy the code and legal obligations of Virginia Tech, help satisfy insurance requirements, prevent loss of life, and reduce injury and property damage due to fire and other emergencies.

### **Application**

- All employees and departments within the university community have a responsibility to assure that work is performed safely and that work areas are maintained in a safe manner.
- It is recommended that each department assign the duties of “Safety Coordinator” to an individual(s) within the department, and that this person be assigned responsibility for implementing the requirements of this program. Existing departmental safety committees may also be an effective means to implement this program.
- University policy 1005 requires that departments maintain safe and healthy living, learning, and working environments for faculty, staff, students, and visitors to our campus.

### **Scope**

This program applies to all Virginia Tech properties and to all work performed by Virginia Tech employees regardless of jobsite location.

## **Responsibilities**

The health and safety of university employees, students, and visitors to our campus is of paramount importance to everyone working and learning at the university. It directly impacts both the quality and value of the university. The concern the university displays for its employees, students and visitors mirrors the character and strength of Virginia Tech’s commitment to its academic mission.

### **Employer**

The Occupational Safety and Health Administration (OSHA) requires employers to provide each employee “a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm”. All employees – including managers and supervisors – play a role in helping the university meet this general duty obligation.

### **Departments**

Departments are expected to maintain safe and healthy living, learning, and working environments for faculty, staff, students, and visitors to our campus. Departments must require that faculty, staff, students, and visitors perform work in a safe and healthy manner and in compliance with regulatory requirements and university policies. Departments must ensure that employees are provided required training, that worksites are inspected on a periodic basis to identify and correct hazards, and that all other elements of this program are developed and implemented as needed.

## **FIRE AND LIFE SAFETY PROGRAM**

Responsibility for this program lies with the highest supervisory level of each departmental unit unless otherwise specified. It is recommended that each department designate this responsibility to supervisory personnel; however, other appropriate persons may be designated.

### **Supervisors**

Supervisors must implement the requirements of this program to assure compliance with applicable codes, regulations, and policies. They must also be aware of applicable training requirements necessary under OSHA programs or the fire code. Supervisors should periodically inspect and/or coordinate the inspection of all workplaces to identify hazards. EHSS personnel will assist supervisors with finding solutions for eliminating identified hazards.

### **Employees and Students**

Staff, faculty, students and visitors play an important part in assuring safety: they must do what they can to protect themselves and others within the university community and respond appropriately to emergencies. Employees must avail themselves of information pertaining to the safe conduct of their work, regardless of the setting. Students must also participate in fire and life safety programs and respect the safety of others and their own safety. EHSS offers fire safety training programs for both the employee and student.

### **Contractors**

Contractors working at the university are expected to observe and abide by state and federal codes and regulations as well as policies and procedures established for the university community. Refer to Virginia Tech's [\*Safety Requirements for Contractors and Subcontractors\*](#) for detailed information.



## Fire Emergency Action Planning

### Responding to a Fire Emergency

If a fire emergency occurs, all persons at Virginia Tech have a responsibility to take immediate and appropriate action as outlined in your department's Emergency Action Plan (EAP). For those buildings that do not have a fire alarm, you may notify other occupants by knocking on doors and shouting "fire" as you exit the building. Do not jeopardize your own safety to do this. Your department's EAP will be activated and all occupants must evacuate the building. (To check if your building is equipped with an automatic fire alarm, detection and/or a fire suppression system – sprinklers, contact the Fire Safety Engineer at [firesafe@vt.edu](mailto:firesafe@vt.edu) or 231-9068.)

There is generally no employer expectation for employees to attempt to extinguish a fire or otherwise stay in their workplace for any reason upon being notified of a fire emergency. However, employees that oversee hot work (e.g., welding, cutting, brazing), that are involved in construction, commercial cooking or renovation operations, serve as crowd managers, or that are specifically identified by job or role must be trained to use portable fire extinguishers. Also, some employees may be required to maintain critical equipment or services or to arrange for the orderly shutdown of hazardous processes; such a requirement should be written into the employee's job description and included in your department's EAP.

### **IF THERE'S A FIRE**

#### **SOUND THE ALARM**

If you discover or suspect a fire, sound the building fire alarm.  
If there is no alarm in the building, notify other occupants by knocking on doors and shouting "**FIRE**" as you leave the building.

#### **LEAVE THE BUILDING**

Try to rescue others **ONLY** if you can do so safely.  
Move away from the building at least 50 feet away, out of the way of the fire department.  
Don't go back into the building until the fire department says it is safe to do so.

#### **CALL THE FIRE/POLICE DEPARTMENT – 911**

Dial 911 or use an "emergency" phone.  
Give as much information as possible to the 911 operator.

### **Intentional False Alarms**

A false alarm is an intentional activation of a fire alarm when no emergency exists. This does not include malfunctions of the alarm system. False alarms have the potential for causing panic and harm to building occupants unnecessarily. Anyone caught making a false alarm at Virginia Tech will be subject to criminal charges and will be referred for disciplinary action by the appropriate university department.

## FIRE AND LIFE SAFETY PROGRAM

### Fire Evacuation Planning

Each university department or unit must develop an Emergency Action Plan (EAP) that outlines the actions occupants in the building must take during emergencies. Fire evacuation planning is a part of each department's EAP. It must include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete or, where approved, by selected floors or areas only.
2. Procedures for employees who must remain to operate critical equipment before evacuating.
3. Procedures to account for employees and occupants after evacuation. These procedures will usually include designation of an emergency assembly area.
4. Identification and assignment of personnel responsible for rescue or emergency medical aid.
5. The preferred and any alternative means of notifying occupants of a fire or emergency.
6. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
7. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
8. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.
9. Site plans and floor plans that show exits, primary and secondary evacuation routes, accessible egress routes, areas of refuge (if present), manual fire alarm pull stations, and assembly points.
10. Training of departmental employees by the designated departmental coordinator.

EAP's must be reviewed or updated annually or whenever changes in staff assignments, occupancy or building layout occur. For additional information on fire evacuation planning and development of your department's EAP, please see [www.ehss.vt.edu](http://www.ehss.vt.edu).

## FIRE AND LIFE SAFETY PROGRAM

### Fire Prevention Plans

Fire prevention plans require an overall emphasis on the building and specific hazard associated with its normal use. The plan identifies specific personnel responsible for fire prevention duties such as controlling the accumulation of combustibles and other potential sources of ignition. All Virginia Tech buildings, owned or leased must develop a fire prevention plan that includes the following:

1. A list of major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources associated with the normal use and occupancy of the area.
2. Procedures to control accumulations of flammable and combustible materials.
3. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

The fire safety plan is required to be evaluated annually or any time a change occurs in the building. The plan must be made available to the fire department, EHSS and/or the State Fire Marshal Office when requested.

In addition, the department must communicate certain information to employees, which includes:

- Informing each employee of the fire hazard(s) to which he or she is exposed.
- Review with employees, when they are initially assigned to a job, those parts of the fire prevention plan that are necessary for employees to protect themselves from potential fire hazards.
- Review the fire prevention plan again with any employee that is reassigned to a new job with different hazards.
- Review the plan with all employees any time a change is made to the plan.
- Review the plan with all new hires.

### Fire Drills

One of the keys to the success of emergency planning and procedures is the training of building occupants. This section sets out the frequency of drills along with who should be involved and how the drills are conducted.

Frequency of fire drills is as follows:

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Resident Halls	Annually	All occupants
Schiffert Health Center	Quarterly	All occupants
Wallace Hall Day Care	Monthly	Daycare occupants only
	Annually	All occupants in building
Academic Buildings	Annually	All occupants
All other support buildings	Upon request	All occupants

## FIRE AND LIFE SAFETY PROGRAM

Once you have reviewed your evacuation and fire prevention plans with your employees, practice drills are recommended to ensure that the employees are prepared for emergencies. All fire drills must be coordinated with EHSS in advance by calling 231-9068 or email [firesafe@vt.edu](mailto:firesafe@vt.edu). EHSS can assist you with drills and involve outside agencies such as the fire and police departments. Fire drills are a vital part of a comprehensive campus fire safety program. Drills are held to familiarize occupants with drill procedures and to make the drill a matter of established routine.

**All fire drills at will be announced and preplanned.  
If a fire alarm sounds and you have not been notified prior to the alarm that it is a drill, take immediate action, evacuate the building and protect yourself.**

## Public Assembly Occupancies

Assembly occupancies include, but are not limited to, all buildings, portions of buildings, or temporary structures such as a tent used for gathering together 50 or more persons for such purposes as education, deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation or similar uses, or that are used as a special amusement building regardless of occupant load. (NFPA Life Safety Code, 2006 edition)

Examples of assembly occupancies found both on and off campus include large lecture halls, auditoriums, sports arenas, fraternity function rooms, theaters and food service dining areas.

Public assembly events involve various risk factors associated with having large numbers of people in one location. The primary risk factors are high occupant density, occupants that are not familiar with the building, occupants who may be impaired due to consumption of alcohol or drugs, and events held where there is limited lighting. These risks can be managed through proper event planning and management. Planning for all events (excluding events planned through special events office and Athletics Department) should begin by contacting UUSA, Event Services Office at <http://www.uusa.vt.edu/eventpln/index.htm>, or phone 231-5005.

The following are required for all public assembly occupancies:

1. The employees or attendants of assembly events must be trained in emergency evacuation procedures and practice their duties during fire drills.
2. They must also be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment where provided.
3. In "live" theaters, motion picture theaters, auditoriums, and other similar assembly occupancies, an audible announcement must be made not more than ten minutes prior to the start of each program to notify occupants of the location of the exits to be utilized in case of fire or other emergency and any other emergency procedures unique for the assembly area.
4. All assembly areas are required to have signs posted stating the allowable number of persons permitted with considerations given for the use of the space.

Specific information can be found in Appendix G -- Planning and Management Guide for Public Assembly Events.

## FIRE AND LIFE SAFETY PROGRAM

Training can be arranged by contacting EHSS at 231-8759 or 231-9068.

In order to comply with the requirements of the Virginia State Fire Prevention Code, it may be necessary to contact the EHSS to request permits and/or approvals for special events. These events include, but are not limited to, hot work operations, open flames and burning activities, pyrotechnics/fireworks, special effects, temporary facilities, tents and stages as noted in Appendix J. Required approval and inspections must be requested as far in advance as possible. All persons planning public assembly events are encouraged to contact EHSS Fire Safety for information and assistance.

## Means of Egress (Exiting)

One of the primary goals of the Virginia Statewide Fire Prevention code is to safeguard life in the event of a fire by assuring a safe path of egress travel for occupants. This is achieved by controlling the number of occupants that are allowed to occupy a room or area; and by assuring the egress route is safe and available for immediate use.

### Occupant Load

The design occupant load is the number of occupants that are intended to occupy a building or portion of a building at any one time and the number for which the means of egress is designed. There is a limited to the density of occupants permitted in an area to enable a reasonable amount of freedom of movement. Occupant load set for any space (especially classrooms, laboratories, auditoriums and all of the other places of assemblies) should not be exceeded at any time. If you need further assistance determining the occupant load for a space or a special event, contact EHSS Fire Safety.

### Posting of Occupant Load Signs

Any space used for assembly occupancy is required to display, in a visible location, the approved occupant load. In addition, occupant load sign must be posted in any space occupied by 50 or more persons.

### Egress Requirements

#### General

The means of egress from each part of the structure, including exits, stairways, egress doors, and any panic hardware must be maintained in a safe condition and available for immediate use. Freestanding furniture, trash, combustible material (e.g. paper products), or any unapproved storage (contact EHSS Fire Safety Engineer for further information on when storage is acceptable in means of egress) should not be allowed in any part of means of egress. Fire protection equipment (e.g. fire alarm panels, fire extinguishers, etc...) should always be readily accessible to maintenance and emergency response personnel at all times. The exit signs should be lit and in working condition at all times. The access to exit doors should always be kept free of any obstruction.

#### Stairwells and

Stairwells and corridors are intended to provide a safe and adequate

## FIRE AND LIFE SAFETY PROGRAM

<b>Corridors</b>	means for building occupants to exit the building and for emergency personnel to access the building during an emergency.
	Tables, showcases, holiday decorations (Christmas trees), vending machines or other obstructions cannot obstruct aisles, passageways or stairways during hours when the building is open to the public.
	Display boards, signs, coat racks and any other movable equipment that obstructs the path of egress are prohibited. Draperies and similar hangings must be fire retardant (with a tag or a certificate for proof) and cannot obscure an exit.
	<b>No</b> storage is allowed in stairwells at any time. The State Fire Prevention Code does not permit equipment, such as vending machines, to be placed in any stairwell. This is to ensure safe egress for occupants in the event of an emergency.
<b>Exit Doors</b>	Exit doors must be easily opened from the egress side without the use of a key or special knowledge. Exit doors can be locked from the outside so long as the door can still be opened from the inside. Thumb bolts, slide latches and any other type of manual locking devices are prohibited on exit doors.
	Stairwell doors cannot be locked at any time. These doors must be self-closing and self-latching. They must also remain closed at all times to inhibit the spread of smoke into the stairwell.
<b>Aisles</b>	In each room where chairs and/or tables are utilized, the arrangement needs to provide for ready egress by aisle paths and aisles to each egress door.
	The minimum required width is 44 inches where serving an occupant load greater than 50, and 36 inches where serving an occupant load of 50 or less for the entire room.
	Chairs, table or other objects cannot obstruct the clear width of aisles.
<b>Egress Awareness</b>	Building occupants should take the time to become more familiar with their building. Occupants should think of an emergency scenario that would require them to evacuate, and then determine a primary and an alternative means of egress for themselves. They should also become more familiar with what is going on above and below the level where they normally work. Employees should walk the halls and notice the placement of portable fire extinguishers. If the building is so equipped, notice the location of other fire protection systems, such as fire alarm system pull stations and sprinkler heads. This will certainly be time well spent!

## Fire Prevention

Fire prevention starts with identifying fire hazards. All members of the university community – faculty, staff, students and visitors – have a personal obligation to be aware of fire hazards and to reduce or eliminate the risk of fire on our campus.

### Identifying Common Fire Hazards

The following is a list of common fire hazards found during daily activities on campus.

<b>Combustible Waste Material</b>	Waste accumulation is prohibited. When these items are allowed to accumulate, the risk of fire is increased. Under the right conditions, the buildup of dust from wood, plastic or certain metal operations can lead to a fire or explosion. Construction debris must be properly disposed of to eliminate the risk of fire.
<b>Ignition Sources</b>	A safe clearance between ignition sources such as light fixtures, heaters and flame-producing devices, to name a few, and combustible materials needs to be maintained. For specific requirements look under basic Fire Prevention Strategies.
<b>Open Burning</b>	Due to the hazards associated with open burning, all such activities require an open burn permit. A permit application for an activity can be submitted to EHSS, Fire Safety Engineer. Further information on the requirements for an Open Burn Permit can be found on Page 26.
<b>Open Flames</b>	Similar to open burns, activities involving open flames require an open flame permit. Open flames activities include, but not limited to, all open flame decorative devices, candles, theatrical performances, religious ceremonies, torches for removing paint, lanterns, kerosene heaters, and gas fired heaters. Further information on the requirements for an Open Flame Permit can be found on Page 26.
<b>Powered Industrial Trucks</b>	Powered industrial trucks necessitate additional fire safety requirements due to battery-powered electric motors or internal combustion engines using liquid fuel or LP gas. These additional requirements can be found on page 21.
<b>Smoking</b>	Smoking is prohibited in facilities owned or leased by the university. Outdoors, discarded smoking materials carelessly tossed in waste containers or into landscaping can easily start a fire. Use approved waste containers to discard all smoking materials properly.
<b>Vehicle Impact Protection</b>	Vehicle impact protection is required at locations where a moving vehicle could strike a piece of equipment that contains fuel or is fuel fired. Guard posts and other physical barriers must be installed to prevent impact to the equipment.
<b>Indoor Displays</b>	Indoor displays of merchandise or other items pose a number of fire hazards to building occupants, such as blocked egress paths and rapid fire burning.
<b>Storage</b>	Materials should be stored in such a way that they will not obstruct the fire suppression sprinkler heads. Items should be stored 18 inches away from the ceiling if the room or area is protected by a fire

## FIRE AND LIFE SAFETY PROGRAM

suppression system (sprinklers) and 24 inches from the ceiling if there is no fire suppression system. Exceptions are allowed for attached wall shelving unless located directly under a sprinkler head. If wall shelving is located directly under sprinkler head the 18" clearance should be maintained.

### Basic Fire Prevention Requirements

After identifying the hazards in your area, take action to eliminate or control these hazards and prevent fires.

### Housekeeping

<b>Accumulation of combustible materials</b>	The accumulation of combustible materials (such as cardboard boxes, magazine/journals and paper products) is prohibited. Combustible material must never be stored any closer than 36" from a heating appliance or electrical light. Items no longer in use should be properly disposed to avoid stacking and accumulation on counters, top of cabinets, floors and desks.
<b>Scrap, waste materials, dust and trash</b>	When these items are allowed to accumulate, the risk of fire is increased. Under the right conditions, the buildup of dust from wood, plastic or certain metal operations can lead to a fire or explosion.
<b>Plastic and foam items</b>	The storage and use of foam or plastic cups, utensils, etc. close to heat sources should not be allowed. These materials are combustibles and can quickly start a fire (e.g. Foam cups left next to a coffee maker). Plastic foam also burns rapidly and gives off dense toxic black smoke.
<b>Miscellaneous Combustible Material Storage</b>	The management of combustible materials storage in buildings will reduce the risk of fire.
	<b>Ceiling Clearance</b> – 24 inches in non-sprinklered buildings is strictly required for ceiling clearance. This will allow manual hose streams of water to effectively reach the top of a burning piles and any adjunct storage Ceiling clearances of 18 inches is required in sprinklered areas to allow the even distribution of water to the storage.
	<b>Means of Egress</b> - Combustible materials cannot be stored in corridors or egress paths that could jeopardize the safety of occupants leaving the building.
	<b>Equipment Rooms</b> - Combustible materials cannot be stored in boiler rooms, mechanical rooms or electrical closet and equipment rooms.
	<b>Fueled Equipment</b> – Motorcycles, mopeds, lawn-care equipment and portable cooking equipment cannot be stored inside buildings. The exception to these is those spaces that are designed and rated for the specific fueled equipment, such as a garage (contact EHSS Fire Safety Engineer to affirm the design specifications for a space in question).



## FIRE AND LIFE SAFETY PROGRAM

	<b>Storage under canopies and roofs that project from the building</b> – This would include loading docks, entrance canopies, etc. Storage is permitted if an automatic sprinkler system is present.
	<b>Storage Heights</b> – Piled storage in the open cannot exceed 20 feet. This will reduce the size of a potential fire and prevent tip-over potential.
<b>Decorations</b>	Decorations, signs and other items should not be hung on or near the sprinkler head.
<b>Obstructing Portable Fire Extinguishers</b>	Access to portable fire extinguishers should not be obstructed by other equipment, furniture or miscellaneous storage. Extinguishers must be clearly visible with notification signs displayed.
<b>Spills on Floor</b>	Any condition causing leaks or drips of flammable or combustible liquids should be corrected. The area of the spill should be cleaned immediately (contact EHSS for additional clean-up requirements).
<b>Hoarding</b>	Hoarding increases the risk of fire and possible structural damage due to increased weight loading on floors. Maintain premises free of unneeded and unnecessary combustible materials. Surplus or properly discard unused items being stockpiled or hoarded. Hoarding is a serious fire code violation and will be treated as such.
<b>Clear Passage</b>	Keep passageways clear of obstacles, including furniture, trash, misc. storage and equipment.
<b>Materials that spontaneously combust</b>	Oily rags or other materials soaked in oil can start a fire by themselves if placed in areas where the air does not circulate. Contact EHSS for additional requirements for Oily Rags.

### 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.

<b>Interior Finish</b>	The following are requirements to consider when planning a renovation or refinish of walls, ceilings and floors: <ul style="list-style-type: none"> <li>- All new finishes must meet the minimum requirements of NFPA standards and the building code.</li> <li>- Finish materials in corridors, places of public assembly and high hazard areas must be "Class A". This is the highest protection rating dealing with the flame spread and smoke production of a product or material.</li> </ul>
<b>Documentation</b>	Any decoration, whether purchased from a store, dealer, catalog or other business or if handmade, will require documentation acceptable to EHSS-Fire Safety and/or the SFMO that the materials used meet the fire safety standards of fire resistance and safety.
<b>Materials</b> (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. EHSS Fire Safety will provide the specific requirements upon request. It is recommended that you

**FIRE AND LIFE SAFETY PROGRAM**

	<p>contact EHSS Fire Safety for consultation prior to purchasing or installing decorations if you are unsure of its rating.</p>	
<p><b>Amount of Decorations</b></p>	<p>According to the Statewide Fire Prevention Code, the amount of combustible materials posted on the walls should be limited to 10% of the existing wall space of an area. The amount of decorations used will be limited by the following criteria:</p> <ul style="list-style-type: none"> <li>- Decorations must not obstruct any corridor, exit or safety device.</li> <li>- Decorations, paper, signs, etc. are not permitted on doors</li> <li>- No amount of any combustibles that would aid in the rapid spread of fire such that it could endanger or entrap the occupants (e.g. plastic or chemical based products such as banners, flags, tapestry or foam material).</li> </ul> <p>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.</p>	
<p><b>General requirements include:</b></p>	<p>Vegetation</p>	<p>Vegetation such as hay stacks, leaves, branches, large amounts of plant cuttings, etc. may not be used in any Virginia Tech building unless approved by EHSS Fire Safety and documentation of adequate fire resistance is provided in advance of using the material.</p>
	<p>Live holiday trees</p>	<p>May not be used inside any Virginia Tech building or facility.</p>
	<p>Locations</p>	<p>Decorations must not be attached to, hung from, or obstruct any emergency device or fire protection equipment (e.g. fire alarm panel, portable fire extinguishers), including sprinkler heads and piping. 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.</p>

## FIRE AND LIFE SAFETY PROGRAM

	Electrical	<p>Electrical lights, decorations, and cords must comply with the following conditions:</p> <ul style="list-style-type: none"><li>- The device must 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 tag supplied by the manufacturer.</li><li>- Do not use electrical decorations or cords on combustible vegetation, dry trees, curtains or any other combustible material that may be ignited by the heat or potential electrical short of the device.</li><li>- Multiple electrical devices may be plugged into an approved "Power Strip", which incorporates a breaker, on/off switch, and is surge protected. Power strip must be plugged directly into a wall outlet. This allowance does not apply to heat producing devices (e.g. space heaters), which must be plugged directly into an outlet.</li><li>- Electrical decorations must be turned off and should be unplugged at the end of the day or when the building will be unoccupied for an extended period.</li><li>- Electrical decorations or cords must not be laid or taped across floors where they could become damaged.</li><li>- Any electrical decoration or cord that is damaged, worn, showing signs of overheating, etc. must be taken out of service and repaired or replaced.</li></ul>
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### Fire-Rated Doors and Fire-Resistant Barriers

<b>Fire-rated Doors</b>	Fire-rated doors are generally found at any opening to a corridor, stairwell, storage room, and mechanical and/or electrical equipment room. Contact EHSS Fire Safety Engineer for more information on identifying Fire Doors in your area.
	Blocking fire/smoke rated doors with wedges or other items allows smoke and fire to spread rapidly through a building, possibly preventing occupants from quickly evacuating during a fire emergency. Fire/smoke rated doors are allowed to be propped open during maintenance and house keeping operations only when the attendant is in the immediate area.

## FIRE AND LIFE SAFETY PROGRAM

<b>Renovation Projects</b>	All building materials used in renovation and building projects must meet the state fire code requirements for fire-resistance, and all work must be performed in accordance with the building code requirements. All renovation projects must comply with University Policy 5405.
<b>Firestopping</b>	All penetrations of floors, ceilings, and/or walls are avenues for smoke and heat travel. These penetrations must be properly fire stopped where required. Contact EHSS for more information on fire stopping requirements. Ceiling tiles also provide a fire/smoke barrier and should be properly maintained. Ceiling tiles that are damaged, missing or disturbed for any reason should be restored to their original condition or replaced.

## Electrical Hazards

<b>Use of extension cords and multiple plug adapters</b>	<p>Multiple plug adapters without over-current protection are not permitted on campus.</p> <p>Extension cords may <u>only</u> be used for temporary operations and must never be used as permanent wiring. Examples would include housekeepers using a vacuum cleaner and portable AV equipment. Using the right size extension cord for the equipment being used is required.</p> <p>Power strips with circuit breaker protection and 3 to 20 foot cords may be used in place of residential extension cords. Each power strip must be plugged directly into the wall outlet. The Fire Code prohibits “daisy” chaining power strips into one another.</p> <p>If additional outlets are required place a work order with Physical Plant (231-4300).</p>
<b>Electric space heaters</b>	Many buildings on campus have uneven heat distribution, causing occupants to bring electric space heaters into their work areas. Be sure heaters have tip over automatic safety cut-offs and that the wiring is in good condition. 3 feet clearance is required around the heater. Placing a space heater near or in contact with combustible materials can be a fire hazard. Thus, it is prohibited.
<b>Portable fans</b>	Small portable fans help improve ventilation in an area. They can also pose a fire hazard if placed near combustible materials, around flammable liquids or where the blades of the fan can easily catch items. Make sure wiring on fans is not damaged and complies with the National Electrical code. Contact EHSS Fire Safety Engineer for further information.
<b>Wiring, Switches and Plugs</b>	Overloaded circuits, damaged wiring and defective switches and outlets can all lead to electrical fires. Inspect all wiring, switches and plugs. Report any damage found to Physical Plant (231-4300) and have a qualified electrician make any repairs necessary before using.
<b>Electrical Outlets</b>	All electrical outlets are required to have proper cover plates in place at all times. If a cover plate is found missing, report it to Physical Plant (231-4300) to have the hazard corrected.
<b>Junction Boxes and</b>	Junction boxes and the breakers/disconnects in electrical circuit panels

## FIRE AND LIFE SAFETY PROGRAM

<b>Electrical Panels</b>	are required to be properly labeled advising what it controls for emergency response and maintenance personnel. Cover plates are required to be in place at all times. Open spaces in electrical panels can expose wiring. All open spaces must be closed with the proper blanks. Tape and labels directly attached to breaker switches is not permitted.
<b>Wet Electrical Cords</b>	Do not use electric cords or equipment that is damp or wet unless they are approved for such use (contact EHSS Fire Safety Engineer for more information). Do not connect or disconnect electrical cords or equipment when your hands are wet.
<b>Overloaded Motors or Circuits</b>	Do not overload motors or circuits; overloaded motors and circuits can easily be a source of ignition.
<b>Lighting Fixtures</b>	Report any problems with lighting fixtures to Physical Plant (231-4300) immediately. Storage must be at least 3 feet below overhead light fixtures.
<b>Faulty Heating Elements</b>	Faulty heating elements can be a source of fire. Report any problem with heating equipment to Physical Plant (231-4300) immediately.
<b><i>Don't try to fix electrical problems yourself!</i></b>	Report all electrical problems immediately to Physical Plant (231-4300) so that a qualified electrician can make the repairs.

## Hazardous Chemicals

Hazardous chemicals are defined by the fire code as those that pose an unreasonable risk to the health and safety of operating or emergency personnel, the public and/or the environment if not properly controlled during storage, handling, use, disposal and transportation. They are classified as physical hazards and may also pose health hazards.

Additional requirements may also apply to certain high-risk areas on campus, such as laboratories and other areas on campus. Be sure to check the Hazardous Chemical Management Program for specific requirements or contact the University Chemical Hygiene Officer at 231-7611.

**Flammable liquid** means any liquid having a flashpoint below 100 deg. F. (37.8 deg. C.), except any mixture having components with flashpoints of 100 deg. F. (37.8 deg. C.) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Check your Material Safety Data Sheet (MSDS) for characteristics or classification of a particular liquid.

Class I flammable liquids are divided into three classes as follows:

Class IA	Liquids having flashpoints below 73 deg. F. (22.8 deg. C.) and having a boiling point below 100 deg. F. (37.8 deg. C.).
Class IB	Liquids having flashpoints below 73 deg. F. (22.8 deg. C.) and having a boiling point at or above 100 deg. F. (37.8 deg. C.).
Class IC	Liquids having flashpoints at or above 73 deg. F. (22.8 deg. C.) and below 100 deg. F. (37.8 deg. C.).

## FIRE AND LIFE SAFETY PROGRAM

**Combustible liquid** means any liquid having a flashpoint at or above 100 deg. F. (37.8 deg. C.) Combustible liquids are divided into two classes as follows:

Class II liquids	Liquids with flashpoints at or above 100 deg. F. (37.8 deg. C.) and below 140 deg. F. (60 deg. C.).	
Class III liquids	Liquids with flashpoints at or above 140 deg. F. (60 deg. C.) Class III liquids are subdivided into two subclasses:	
	Class IIIA liquids	Those with flashpoints at or above 140 deg. F. (60 deg. C.) and below 200 deg. F. (93.3 deg. C.).
	Class IIIB liquids	Those with flashpoints at or above 200 deg. F. (93.3 deg. C.).

When a combustible liquid is heated for use to within 30 deg. F. (16.7 deg. C.) of its flashpoint, it must be handled in accordance with the requirements for the next lower class of liquids, with Class I liquids being the most volatile. Check your MSDS sheets for characteristics or classification of a particular liquid.

### Exempt Amounts

There are certain amounts of flammable and combustible liquids stored in each *control area* that are considered *exempt*. These amounts are significant in that if these amounts are exceeded, then the area or building may have to be reclassified as a *Hazardous Use Group* under the building code. Excessive storage also constitutes a violation of the fire code. If your storage exceeds these amounts, contact the Fire Safety Engineer, EHSS for guidance at 231-9068.

Exempt amounts of flammable and combustible liquids per control area:

Condition	Flammable Liquids (US gallons)			Combustible liquids (US gallons)		
	IA	IB	IC	II	IIIA	IIIB
Inside; unprotected by sprinklers or cabinet.	30	60	90	120	330	13,200
Within approved cabinet; unsprinklered structure.	60	120	180	240	660	26,400
In sprinklered structure; not in approved cabinet	60	120	180	240	660	unlimited
In sprinklered structure; in approved cabinet.	120	240	360	480	1,320	unlimited
Outside storage.	60	120	180	240	660	unlimited

There are also limitations on quantities stored in individual containers:

Container	Flammable Liquids (US gallons)			Combustible Liquids (US gallons)	
	IA	IB	IC	II	III
Glass or approved plastic.	1pt.	1qt.	1	1	1

## FIRE AND LIFE SAFETY PROGRAM

Metal (other than DOT drum)	1	5	5	5	5
Safety cans	2	5	5	5	5
Metal drums (DOT specifications)	60	60	60	60	60
Approved portable tanks	660	660	660	660	660

Note: Nearest metric size is also acceptable.

### General guidelines for hazardous chemicals

<b>Substitution</b>	Where possible, flammable chemicals should be replaced by safer, less flammable ones to reduce the risk of fires. Any substituted material should be stable, non-toxic and should either be nonflammable or have a high flashpoint.
<b>Storage</b>	<p>The proper storage of flammable liquids in a work area is required to reduce the risk of fire and prevent health hazards. Remember that the quantities that can be stored in one location are limited. Storage areas should be provided with at least fire extinguishers, but a fire protection system must be considered for any large storage area.</p> <p>Flammable liquid storage cabinets should be used where greater quantities of liquids are needed. Contrary to popular thinking, they are not designed to contain a fire but are designed to prevent a fire outside from reaching the contents of the cabinet for a period of 10 minutes - just enough time to allow escape from the area. Limits for cabinets are:</p> <ul style="list-style-type: none"> <li>- No more than 120 gallons (454L) of Classes I, II, and IIIA combined in one cabinet.</li> <li>- Only three cabinets are allowed in each fire area unless each group of three can be separated by 100 feet.</li> <li>- If the building is sprinklered, the number can be doubled to six cabinets.</li> <li>- If stored amounts exceed the above limits, a separate inside storage room is required in accordance with the requirements found in Virginia Statewide Building Code, 2003 edition.</li> </ul>
<b>Handling</b>	<p>Flammable and combustible liquids require careful handling at all times. Containers should be tightly sealed when not in use, and liquids should be stored in an area where temperature is stable to prevent a buildup of internal pressure due to vaporization. Safety cans are a good risk management tool where smaller quantities of liquids are handled. They prevent spillage and have spring-loaded safety caps that prevent vapors from escaping and act as a pressure vent if the can is engulfed in fire, preventing explosion and rocketing of the can, which could spread the fire.</p> <p>Users are expected to limit the risk of a fire by reducing the quantities of liquids located outside of storage cabinets/areas. Quantities of flammable and combustible liquids located outside of storage cabinets/areas should be restricted to one day's supply or to what can be used during a single shift.</p> <p>Some flammable liquids, such as xylene, toluene, benzene and</p>

## FIRE AND LIFE SAFETY PROGRAM

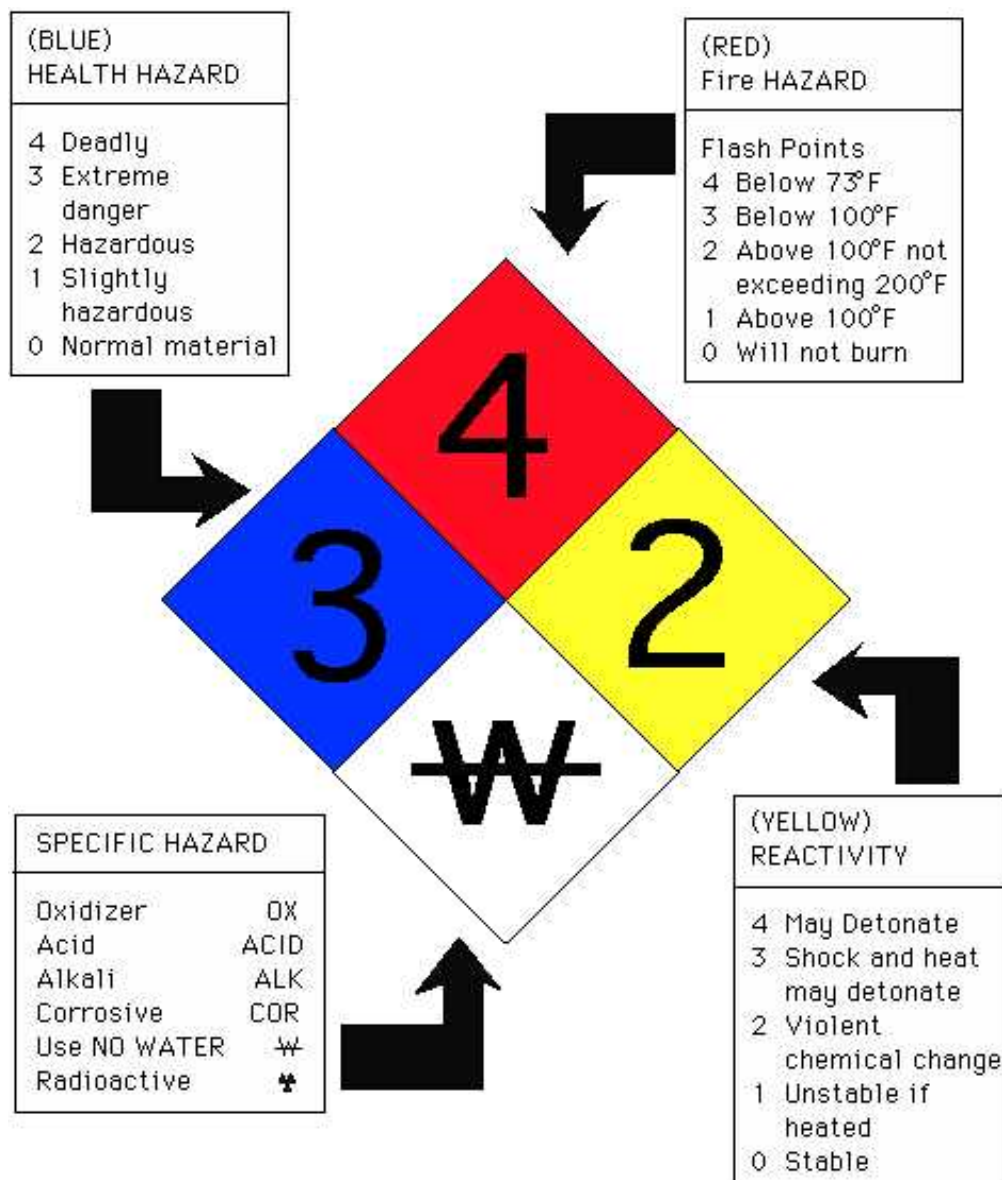
	<p>gasoline have a tendency to accumulate a static electric charge. If the charged is released a spark can be produced and ignition can result. Most nonpolar solvents—they do no mix with water—have this characteristic. Polar solvent, such as acetone and other ketones and alcohols, don't usually present static charges. To prevent the build up of static charge, it is important to bond metal dispensing and receiving containers together before pouring – each container is wired together and one container is connected to a good ground point to allow any charge that may develop to drain away safely.</p> <p>Because there is no easy way to bond plastic containers, their use should be limited to smaller sizes – no more than 4L.</p>
<b>Ventilation</b>	<p>To prevent the accumulation of vapors inside a flammable or combustible materials storage room or area, a continuous mechanical ventilation system must be in place. Both makeup and exhaust air openings must be arranged to provide air movement directly to the exterior of the building. Any exhaust ventilation ducts must be exclusive to the system and used for no other purposes.</p>
<b>Elimination of Ignition Sources</b>	<p>All nonessential ignition sources must be eliminated where flammable liquids are used or stored. The following is a list of the most common sources of ignition.</p> <ul style="list-style-type: none"><li>- Open flames from cutting and welding operations.</li><li>- Furnaces</li><li>- Matches</li><li>- Heater, portable or fixed</li><li>- Motors, switches, and circuit breakers need to be explosion-proof in areas where flammable liquids are used or stored.</li><li>- Mechanical sparks from friction. Use non-sparking tools in these areas.</li><li>- Proper grounding and bonding procedures must be used to eliminate static sparks when transferring flammable liquids to and from containers.</li><li>- Smoking materials</li></ul>
<b>Removal of Incompatibles</b>	<p>Materials that can contribute to a flammable liquid fire should not be stored with flammable liquids. (Examples: oxidizers and organic peroxides)</p>
<b>Aerosol spray cans</b>	<p>Read labels of all spray cans to identify those with flammable gas-propellants. Butane and propane is the most common propellant and should never be exposed to heat or flames.</p>
<b>Spills</b>	<p>If a spill occurs, employees should take the following actions:</p> <ul style="list-style-type: none"><li>- Limit its spread by diking the spill with a suitable absorbent material</li><li>- Minimize vapors by covering the surface of the spill with the same material.</li><li>- Notify your supervisor immediately and contact VTPD and/or EHSS</li></ul>



## FIRE AND LIFE SAFETY PROGRAM

	<p>for assistance and guidance.</p> <ul style="list-style-type: none"><li>- Make sure all sources of ignitions are shut off or controlled.</li><li>- Call EHSS to initiate the proper cleanup right away.</li></ul>
<b>MSDS</b>	Material Safety Data Sheets must be readily available at the location for emergency responders.
<b>Hazard Identification Signs</b>	<p>Visible hazard identification signs are required for the specific material in stationary containers and aboveground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled.</p> <p>Signs are required to alert occupants and emergency responders who may unknowingly enter an area containing hazardous materials</p> <p>The recommended hazard identification sign is the NFPA 704 diamond.</p> <p>Container labeling must be in accordance with the Hazardous Chemical Management Program.</p>

## FIRE AND LIFE SAFETY PROGRAM



### NFPA Diamond used for hazard identification signs.

#### Compressed Gas Containers, Cylinders and Tanks

Flammable compressed gases hazards are it is easily ignitability or can be explosive when mixed with air.

The hazards posed by nonflammable compressed gases are toxicity, reactivity or the ability to support combustion.

The following are requirements for the storage, handling and use of all compressed gases whether they are flammable or nonflammable.

## FIRE AND LIFE SAFETY PROGRAM

<b>Labeling and Marking</b>	All compressed gas containers, cylinders, tanks and systems must be marked according to ANSI A13.1, CGA C-7 or NFPA 704 depending on whether the compressed gas is stationary, portable or piped. Contact EHSS Fire Safety if unclear about labeling or markings.
<b>Inspection</b>	Perform a visual inspection before you accept delivery of the cylinder from the vendor. If the cylinder appears to be damaged or defective, refuse delivery!
	Routinely inspect cylinders that are in use for: <ul style="list-style-type: none"> <li>- leaking regulators,</li> <li>- physical damage to the cylinder or valves,</li> <li>- dented, bulging, gouged or corroded</li> </ul>
	Do not use a cylinder that appears to be faulty. Take it out of service immediately and contact the vendor.
	All gas cylinders must have proper labeling. Labeling must also indicate if the cylinder is full, empty or in-service.
<b>Security and protection</b>	All compressed gas containers, cylinders, and tanks must be safeguarded to prevent dislodgement by accident or unauthorized personnel.
	Physical protection may include guard posts, fenced-in areas or specifically designed storage areas with approved separation.
<b>Container supports</b>	The danger associated with all compressed gases is the potential for energy release by container or fitting fixtures. For this reason fire code requires all compressed gas cylinders to be properly secured as a means of protection against physical or mechanical damage. This can be done by: <ol style="list-style-type: none"> <li>1. Securing containers, cylinders and tanks to a fixed object with one or more restraints.</li> <li>2. Securing containers, cylinders and tanks on a cart or other mobile device designed for movement.</li> <li>3. Nesting of containers, cylinders and tanks at filling or servicing facilities being careful not to obstruct the means of egress.</li> </ol>
<b>Overpressure protection</b>	All compressed gas cylinders, except those containing highly toxic gases, are equipped with pressure relief devices as a measure of protection against catastrophic container failure. These devices operate when compressed gas pressure, temperature or both exceed safe limits. Identifying this protection and making sure it has not been painted over, removed, damaged, contaminated, obstructed or impaired is the responsibility of the person using the cylinder.
<b>Housekeeping</b>	Check valves, filters, flash arrestors and other gas system apparatus must be maintained in good operating condition and free of dirt and debris that can clog filters and block valves.
<b>Separation and Storage</b>	Separating gas system installations and incompatible gases (flammables and oxidizers) to reduce explosion hazards is one of the easiest safeguards to implement. Separation requirements include: <ul style="list-style-type: none"> <li>• Incompatible materials,</li> </ul>

## FIRE AND LIFE SAFETY PROGRAM

	<ul style="list-style-type: none"> <li>• Combustible waste, vegetation and similar materials,</li> <li>• Ledges, platforms and elevators,</li> <li>• Temperature extremes</li> <li>• Falling objects</li> <li>• Heating</li> <li>• Sources of ignition, and</li> <li>• Exposure to chemicals</li> </ul>
	Cylinders can be separated with a barrier, such as concrete block wall, at least 5 feet high, having a fire rating of at least ½ hour. Contact EHSS Fire Safety Engineer for different construction options.
	A gas cylinder storage area should be located where they cannot be knocked over or damaged by falling objects, and must be protected from vehicular impact.
	As with any hazardous material, gas cylinders cannot be stored in public hallways or unprotected areas. Nonflammable cylinders should not be located closer than 5 feet and flammable cylinders no closer than 25 feet from an exit or unprotected opening such as a window.
	When a cylinder is not being used, the valve should be closed and the valve protector secured in place. Never store gas cylinders near radiators or other heat sources.
	Bulk storage rooms must be specifically designed for the purposes otherwise quantities will be limited. Contact EHSS Fire Safety to obtain approval for any new installation of a cylinder storage area inside or outside campus buildings.
<b>Handling</b>	Be sure to close all cylinder valves when they are empty or not in use. Regulators must be removed and valve protection caps secured in place before moving cylinders.
	When transporting cylinders, always use a cylinder truck or cart to avoid cylinders tipping, falling or rolling. Never roll or drag a gas cylinder. Use appropriate lifting devices, such as cradles or nets when hoisting a cylinder with a crane or derrick for vehicle transport. Lifting a gas cylinder with a magnet, sling or by the valve protection cap can lead to disaster and is prohibited.
	When opening a valve on a cylinder, stand to one side of the regulator and open the valve slowly.
	Do not attempt or repair a gas cylinder regulator; call your distributor immediately.
<b>Medical Gas Systems</b>	Compressed gases intended for inhalation or sedation present additional hazards. Contact EHSS, Fire Safety for additional requirements.
<b>Additional information</b>	Additional information can be found in NFPA (National Fire Protection Association) 55, 2005 edition, Standard for the Storage, Use and Handling of Compressed and Liquefied Gases in Portable Cylinders. A copy of this information can be obtained from the Fire Safety Engineer.

## FIRE AND LIFE SAFETY PROGRAM

### Building and Renovating Space

The Commonwealth of Virginia Department of General Services, Division of Engineering and Buildings (DEB), recently instituted a new building permit policy that affects all state agencies. Under this policy we are required to issue building permits for all renovations and construction projects costing less than \$500,000. The Director of Facilities has been designated as the Agency Representative to issue permits and ensure the University meets all legally mandated Virginia Uniform Statewide Building Code (VUSBC) requirements. For additional information concerning this subject visit <http://www.facilities.vt.edu/physp/intro.html>, or contact the Campus Renovation Services section of Facilities.

### Miscellaneous Requirements

<b>Landscaping</b>	Landscaping must not: <ul style="list-style-type: none"><li>– Impede fire vehicle or emergency responder access to a building.</li><li>– Obstruct access to fire hydrants, fire department connections or other fire sprinkler test valves or other emergency devices.</li><li>– Obstruct or cause a tripping hazard for occupants evacuating a building to a public way.</li><li>– Obstruct exits from doors, windows or other designated evacuation points from a building.</li></ul>
<b>Breaches in fire or smoke rated barriers</b>	<ul style="list-style-type: none"><li>– Holes in fire rated walls or smoke barriers will not be permitted unless the condition is allowed by the Virginia Statewide Uniform Building code or has been approved by the Virginia Tech Building Code Engineer.</li><li>– Doors, windows, hatches, visual panels, etc. may not breach a firewall or smoke barrier unless allowed by the Virginia Statewide Uniform Building code or has been approved by the Virginia Tech Building Code Engineer.</li><li>– Cables, equipment cords, etc. may not be placed in or run through any permitted opening in a rated fire wall or smoke barrier, such as through a door or within ventilation ductwork.</li></ul>
<b>Wood and sheet metal workshops</b>	<ul style="list-style-type: none"><li>– All wood and metal shavings produced by the work must be cleaned and removed from the building at the end of the job or the workday as appropriate.</li><li>– All shops with machinery that produce hazardous shavings or dust must have an approved dust collection system. This system must be in operation at all times the equipment is in use.</li></ul>
<b>Washer/Clothes Dryer operations</b>	<ul style="list-style-type: none"><li>– Empty the lint catcher in clothes dryers after each load.</li><li>– Check the area behind the washer and dryer periodically for lint or trash build-up and clean as necessary.</li><li>– Dryer vents must exhaust to the exterior of the building.</li></ul>
<b>Automotive and industrial shops</b>	<b>At the end of the work day, or as necessary:</b> <ul style="list-style-type: none"><li>– Clean all work areas of oil to prevent a build up.</li><li>– Return all oils and flammables to their proper storage</li></ul>

## FIRE AND LIFE SAFETY PROGRAM

	<p>cabinets/areas.</p> <ul style="list-style-type: none"><li>– Turn off all power equipment or unplug as necessary.</li><li>– Turn off all fuel valves and power to such systems at the end of the workday.</li></ul>
	<p>All hazardous and flammable materials (paints, thinners, etc.) must be properly stored in a flammable storage cabinet or room when not in use. See page 15 for guidance on the storage, handling and use of flammable and combustible liquids.</p>
	<p>Parts washers may use flammable solvents. Check the Material Safety Data Sheet (MSDS) for the product used and follow the instructions on the MSDS and the guidance on page 15.</p>
	<p>Spray finishing with flammable materials is only allowed in approved paint spray booths. Contact EHSS Fire Safety Engineer for fire safety and building/fire code permit requirements for spray booths at 231-9068.</p>
<b>Art departments</b>	<ul style="list-style-type: none"><li>– When using flammable liquids (such as gasoline, kerosene, etc.) to create or in a display of artwork, written approval is required from EHSS Fire Safety prior to the activity.</li><li>– Electrical wiring and devices used in art creations or display must meet the requirements of the National Electrical Code for temporary wiring. Contact EHSS Fire Safety for approved wiring methods that must be used.</li><li>– All hazardous and flammable materials (paints, thinners, etc.) must be properly stored in a flammable storage cabinet or room when not in use.</li><li>– Heating devices such as blowtorches with open flames must be permitted with a Hot Work Permit. See the Hot Work Permit section on page 24.</li></ul>

## Fire Protection Systems

Fire protection systems may serve one or more purposes in providing adequate protection for fire.

### Building Fire Alarms Systems

Not all buildings on campus are equipped with building fire alarms. It is important to know if your building is equipped with an automatic central fire alarm. More information on your building's fire alarm systems can be requested by sending email to [firesafe@vt.edu](mailto:firesafe@vt.edu).

If your building is not equipped with a building fire alarm, occupants will need to communicate to others in the building by announcing "FIRE" as they exit the building or by other means as defined in the buildings Emergency Action Plan (EAP). Emergency action planning is critical to all campus buildings, but especially important in those buildings with no fire alarm or detection system.

<b>Automatic Fire Alarm Systems</b>	Automatic fire alarm systems are installed to facilitate notification of building occupants of a fire emergency. Various types of smoke and heat detectors along with manual pull stations are linked to the alarm system; when activated, the fire alarm system sends a signal to the Virginia Tech Police Dispatcher and sounds an audible and/or visual alarm within the building.
<b>Manual Fire Alarm Pull Station (Red Boxes)</b>	Manually activated pull stations are located along building exit routes. All buildings equipped with fire alarms will have manual pull stations (red boxes).
<b>Fire Suppression Systems</b>	Fire suppression systems are more commonly known as "sprinkler systems". Several types are present in campus buildings. The most common type uses water and is designed to extinguish small fires and/or reduce the spread of fire to provide building occupants time to evacuate.
	Fire suppression systems are interconnected to the building fire alarm. When a sprinkler head is activated, it automatically activates the building fire alarm.
	The building fire alarm can also be activated by smoke detectors or manually without the sprinklers going off. Manually activation of the fire alarms is how fire drills are conducted.
<b>Other Suppression Systems</b>	Other types of fire suppression systems include dry pipe water and wet chemical systems. These systems are found where hazardous materials are located, in commercial kitchen hood exhaust systems, and in areas where freezing is a concern.
<b>Portable Fire Extinguishers</b>	Fire extinguishers can play an important role in the fire protection program. How successfully they can function, however, depends upon the following conditions having been met:
(Additional information)	<ul style="list-style-type: none"> <li>- The fire extinguisher is properly located and in working order.</li> <li>- The fire extinguisher is of the proper type for the fire that has</li> </ul>

## FIRE AND LIFE SAFETY PROGRAM

about selecting and using a portable fire extinguisher can be found in the training section of this program on page 36)

occurred.

- The fire is discovered while still small enough for the fire extinguisher to be effective.
- A person ready, willing, and able to use the fire extinguisher discovers the fire.

If you need assistance with determining the type and distribution of portable fire extinguishers in your work area, contact the Fire Safety Engineer at 231-9068 or email at [firesafe@vt.edu](mailto:firesafe@vt.edu).

## Permits

### Hot Work Permits

#### Fire Prevention and Suppression Procedures for Hot Work Operations

If not properly controlled, hot work operations present serious fire hazards that can lead to significant property damage, injury and/or loss of life. To ensure safe hot work activities the following procedures have been established. These procedures apply to all work performed on university property. An example of a Hot Work Permit can be found on page 49.

#### Policy for Work Performed Outside a Designated Area and/or Temporary Operation

A Hot Work Permit must be issued for any temporary operation that may produce high heat, sparks, and/or open flames. These operations include, but are not limited to, the use of open flames, compressed gas or supplied fuel burning, brazing, cutting, grinding, torch soldering, thawing pipe, torch applied roofing, and welding.

#### Procedure to secure a Hot Work Permit:

1. Any university employee performing work requiring a Hot Work Permit must secure the permit **BEFORE** any work is to begin. This will require advance notice. A Hot Work Permit can be obtained from the designated Hot Work Coordinator(s), Fire Safety Engineer or Fire Safety Inspector. A listing of Hot Work Coordinators, who will issue Hot Work Permits, can be obtained from the Fire Safety Engineer.
2. Hot Work cannot begin until the work site has been inspected for safety and the Fire Safety Engineer, Fire Protection Inspector or Hot Work Coordinator issuing the permit has signed the Hot Work Permit. All applicable safety precautions listed on the permit must be followed at all times during the hot work operation. The Fire Safety Engineer, Fire Protection Inspector, or Hot Work Coordinator will inform you of the procedures to follow if the work site is located in a building with a fire detection system.
3. Persons doing Hot Work must indicate on the permit a start time and expiration date. The permit must be posted in plain view at the Hot Work location during the entire operation. After the Hot Work is completed the permit must be returned to the Fire Safety Engineer, Fire Protection Inspector, or Hot Work Coordinator that issued the permit to indicate the job is completed. The Fire Safety Engineer, Fire Protection Inspector, or Hot Work Coordinator (whoever issued the permit) will assure the work site is free of any hot spots or potential fire hazards from the work done for up to 1 hour after work completion.
4. It is important that the permit specifically states the location and start time of the hot work.



## **FIRE AND LIFE SAFETY PROGRAM**

This will allow the Fire Safety Engineer, Fire Protection Inspector, or Hot Work Coordinator to respond to the permit as quickly as possible so the work process will not be delayed.

5. Long-term jobs (of more than one workday) may have a permit issued for the entire work schedule but for no more than one month. The Fire Safety Engineer, Fire Protection Inspector, or Hot Work Coordinator will routinely check the work site to ensure the safety of the hot work being performed. If the work extends beyond the initial completion date, another permit must be secured for the additional time period.

### **Policy for Work Performed in Shops and Other Designated Hot Work Areas**

Campus departments that perform hot work on a routine basis in a permanent shop or other designated work site will be exempt from the above permit requirements only if the area is inspected, approved and issued a permit by the designated Hot Work Coordinator. These permits must be renewed on a yearly basis (old permits should be kept in file for 5 years) or when changes in the shop warrant a repeat inspection. When approved by the inspector a sign will be posted at the work site that reads "Hot Work Approved Area". The Coordinator will re-inspect these areas during his or her annual fire and/or shop inspection of the approved area. Any deficiencies to the designated hot work area or shop must be corrected to continue the designation of "Hot Work Approved Area".

### **Contractors Conducting Hot Work**

Contractors performing hot work shall maintain a Hot Work Permit Program and employee-training program that meets the OSHA requirements found in 29 CFR 1926.352 and ANSI Z49.1-88 and NFPA 51B. Examples of hot work include, but are not limited to, use of open flames, compressed gases or supplied fuel burning, brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, and welding.

A copy of the canceled permit(s) shall be provided to the Project Manager, Hot Work Coordinator or EHSS no more than five (5) working days after completion of the work.

### **Open Flames and Burning Permits (Bonfires, Campfires, Candles, Incense, etc.)**

Open burning is defined as any open/exposed flame, whether indoors or outdoors, that could cause a fire. Examples are candles, incense, bonfires, campfires, leaf burning, artwork involving flames, and pyrotechnics of any kind. Pyrotechnics are not covered in this section but can be found in the following section.

### **Approvals and Permit Application Process**

Open burning on any Virginia Tech property must be approved in writing by the Fire Safety Engineer at EHSS and may also require approval by the Virginia State Fire Marshal's office.

### **Open Flames and Burning – Indoor**

Open flames indoors, particularly when such burning will activate any type of fire alarm detection/suppression system, is normally prohibited. Special exceptions may be authorized under the following conditions:

1. A written request is sent to EHSS using the "Open Burning Permit Application"; see Appendix D on page 45, at least ten (10) working days in advance of the event or operation.

## FIRE AND LIFE SAFETY PROGRAM

2. The proposed burning will not endanger the occupants or facility.
3. The proposed burn location will not block any emergency equipment or access to any building EXIT.
4. The host will be responsible for providing a “Fire Watch” of the entire building during the time of the open burning if any fire safety system must be shut down
5. The host must contact EHSS-Fire Safety, Virginia Tech Police Department (VTPD) and the occupants of the building 24 hours in advance of the event or operation for final coordination.
6. The host will be responsible for providing portable fire extinguishers and emergency procedures trained personnel in the area of the open burn. Contact EHSS-Fire Safety for this training.

### **Open burning – Outdoors**

Open burning outdoors may be authorized under the following conditions:

1. A written request is sent to EHSS using the “Open Burning Permit Application” (see Appendix D on page 45, at least ten (10) working days in advance of the event or operation.
2. The proposed burning will not endanger any adjacent buildings, vehicles or vegetation.
3. The burn location will not block access by emergency vehicles to any building, street or emergency equipment.
4. 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) or 25 feet of any building, vehicle or vegetation.
5. The host will be responsible for providing *portable fire extinguishers* and *emergency procedures* trained personnel in the area of the open burn. Contact EHSS-Fire Safety for this training.
6. The host will contact EHSS-Fire Safety, VTPD and occupants of adjacent buildings 24 hours in advance of the event or operation for final coordination.
7. The host of the open burning will be responsible for complete extinguishment and removal of all materials used in the open burning activity.
8. A fire watch (up to an hour) will be conducted (as determined by EHSS – Fire Safety) to ensure there is no residual heat left in the material.

### **Pyrotechnics/Fireworks Permits**

Approval for the display of fireworks on state property, including Virginia Tech property, must be obtained from the State Fire Marshal’s Office (SMFO) by obtaining a permit. Information about how to apply for the permit can be found at:

[http://www.dhcd.virginia.gov/State\\_Fire\\_Marshal/Explosives.htm](http://www.dhcd.virginia.gov/State_Fire_Marshal/Explosives.htm)

**It is important to note that the SFMO is not obligated to issue its approval if they do not receive all the necessary information 30 work days prior to the requested display date.**

In addition, the SFMO approval may stipulate certain conditions and approval for a specific date and time that is not transferable to any other date, time or activity.

## FIRE AND LIFE SAFETY PROGRAM

Coordination with EHSS Fire Safety is also required to assure notification of all emergency services agencies

### Temporary Facilities, Tents and Stages

University Policy No. 5406, Rev.:2, Date April 2004 addresses the requirement, policy and procedures for temporary facilities, tents and stages. It can be found at:

<http://www.policies.vt.edu/5406.pdf>.

Those tents greater than 900 square feet or having occupancy over 50 persons are required to apply for a state permit at less 30 days in advance. Information and applications can be found at <http://www.facilities.vt.edu/>.

EHSS, Fire Safety must be notified a minimum of 7 days in advance to schedule the required fire inspection. Fire inspections are conducted for all anchored and staked tents on state property. A sample of the inspection form can be found in appendix E on page 49. The following list will be used during the inspection to ensure safety as required by fire code.

Tents under 900 sq feet (except for recreational camping tents and personal pop-up non-anchored tents).	At least one multi-purpose (ABC) fire extinguisher for each tent with a minimum 4-A rating, or two with a minimum 2-A rating each.
	Tent is placed away from all buildings minimum 20 feet.
	Tent is not blocking any means of egress from other structures, sidewalks or emergency fire lanes.
	Cooking/open flames directly under the tent are not permitted. State Fire Code Officials prefer electrical devices or move cooking away from tent area a minimum of 20 feet.
Tents over 900 sq feet or more than 50 occupants, approved by VT EHSS and/or the State Fire Marshall's office:	Tent application (G.S. Form E&B CO-13.3 Tent/Stage) has been submitted and approved by Virginia Department of General Services, Division of Engineering and Buildings (DEB). This includes Miss Utility to be contacted and location of utilities to be marked. (University Policy 5406)
	Detailed site plan
	Certificate of flame resistance
	Detailed floor plan, including furniture and equipment arrangement within the tent or structure indicating egress paths and exits.
	VT map annotating where site is in reference to the campus as a whole.
<b>On-site Inspection Requirements:</b>	At least one multi-purpose (ABC) fire extinguisher for each tent with minimum 4-A

## FIRE AND LIFE SAFETY PROGRAM

	rating, or two with minimum 2-A rating each.
	Tent is placed away from all buildings minimum 20 feet. The State Fire Code Officials can grant exceptions for this distance requirement on case-by-case basis. If you foresee that minimum distance can be a problem, further explanation may be required (such as: structure of building posing the problem, tent not being used for assembly purposes, obstructed means of egress or emergency lanes if proper distances are maintained or improper distances to cooking surfaces if minimum distances are maintained)
	Tent is not blocking any means of egress from other structures, sidewalks or emergency fire lanes.
	If the tent is air supported, all items in the tent must be at least 3 feet away from the walls of the tent.
	Cooking with open flames and all other unprotected open flames are not permitted. Statewide Fire Prevention Code requires a minimum of 20 feet distance between the electrical cooking devices or the cooking activity and the tent. Electric warming trays and other warming devices are permitted.
	All tents anchors and structural supports are properly secured.
Offensive or objectionable activity that creates an unsafe condition is prohibited. The Fire Code Official reserves the right to order the activity to cease in the event that it creates or adds to a hazardous or objectionable situation.	

An example of the fire inspection form used during tent inspections can be found in Appendix I. To obtain more information or to apply online for a tent permit go to:  
<http://www.facilities.vt.edu/servicerequestform/tentpermit.html>

### Special Effects Permits

Approval in accordance with the requirements of the Statewide Fire Prevention code is required prior to the use of all special effects equipment on Virginia Tech property. The following is a list of those types of activities requiring a Special Effects Permits:

- Smoke and haze machines
- Fog machines
- Indoor and outdoor use of gunpowder or other small amounts of explosives
- Special use of temporary electrical installations
- Stage sets that are comprised of large amounts of combustible materials

## FIRE AND LIFE SAFETY PROGRAM

- Stage weapons and fire arms.

An application must be made in writing at least ten (10) days prior to the event. A copy of the Special Effects Permit Application can be found in Appendix F on page 52.

## Fire Inspections

<b>Buildings</b>	A comprehensive fire and life safety inspection of all university buildings is conducted by EHSS to ensure compliance with fire codes. Reports are sent to the involved departments for action. Identified hazards must be corrected in a timely manner unless other arrangements have been discussed and agreed to by EHSS.
	The SFMO conducts acceptance-testing inspections and issues occupancy permits for all construction and renovation projects. This is coordinated through the Building Code Engineer in Facilities Management.
<b>Equipment</b>	All building service equipment inspections are administrated through Physical Plant. Inspection certificates are placed near each piece of equipment if practical. The records from the equipment inspections are maintained by Physical Plant and made available to the Fire Safety Engineer, Fire Inspector and/or SFMO when requested for review.
<b>Fire Protection and Suppression Systems</b>	All fire suppression and detection equipment is maintained and inspected by Residential Dining Programs for residential and dining buildings and by Physical Plant for all other buildings. Copies of inspection reports are made available to the Fire Safety Engineer, Fire Inspector and/or SFMO when requested for review.
<b>Residence Halls</b>	Code compliance inspections are conducted in the Residence Halls every year by the State Fire Marshal's Office. At least 20% of all student rooms are randomly inspected along with all common areas of the building for fire code compliance. Personnel from EHSS Fire Safety and Residential Programs accompany the SFMO on these inspections. When violations are observed: <ul style="list-style-type: none"><li>• The SFMO records the violation</li><li>• EHSS Fire Safety issues a notice of violation to the occupant if available and/or leaves the notice in the student's room at the time of inspection.</li><li>• Notice along with the applicable section of the SFMO Report is forwarded to the Area Coordinator and Residential Programs staff as soon as it is issued.</li><li>• Students and Residential Programs staff are given at least 30 days to correct the violation, after which a follow-up inspection of the building is scheduled.</li><li>• Failure to correct any violation results in disciplinary action as stated in the Student Programs handbook.</li></ul>
	Residential Advisors perform a monthly fire safety inspection using a form provided by Residential Programs. This includes an inspection of all fire extinguishers, storage rooms, hallways, exit lights, and other relevant fire and life safety requirements as stated in the programs. The form is signed and returned to Residential Programs for any further action.

## FIRE AND LIFE SAFETY PROGRAM

<b>Building Plan Review for Construction &amp; Renovation Projects</b>	Building plans for new and renovated campus construction projects are reviewed by EHSS, Occupational Safety Division, for compliance with life safety codes and applicable fire safety standards.
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## Fire and Life Safety Training Programs

The best way to avoid a fire is to be knowledgeable of fire hazards and how to prevent them. EHSS Fire Safety will provide training to any Virginia Tech employee, staff, faculty, and student organization upon request.

<b>New Employees</b>	<p>All new employees of Virginia Tech attend orientation training offered by Personnel Services. As part of this training, information about safety is supplied and reviewed. The “Fire On Campus” pamphlet is included in the packet of information given to the new employee.</p> <p>Supervisors are required to review the fire hazards and emergency procedures for the new employee’s workplace during the first few days of employment.</p>
<b>Employees</b>	<p>A variety of fire and life safety training programs are available to all Virginia Tech employees. EHSS maintains a library of videotapes that are available on loan to departments, free of charge. A complete listing of all the videos in the EHSS lending library can be found at: <a href="http://www.ehss.vt.edu/Resources/EHSSStuff/videos.htm">http://www.ehss.vt.edu/Resources/EHSSStuff/videos.htm</a></p> <p>Training for targeted audiences on fire and life safety, emergency planning, emergency evacuation and portable fire extinguisher use can be arranged on request through the Occupational Safety Educator, phone 231-8759 or email at <a href="mailto:safetytraining@vt.edu">safetytraining@vt.edu</a>.</p>
<b>Students</b>	<p>EHSS Fire Safety and Residential Programs work together each year to provide fire and life safety education to students living on campus. Each year Area Coordinators, Resident Directors and Resident Assistants are required to attend fire and life safety training during their orientation in August.</p> <p>All students living in campus owned residential buildings are encouraged to take an on-line computer “Fire and Life Safety” training course. This course will inform students on how to protect themselves and reduce the risk of fire in their building.</p>

### Fire and Life Safety Training

This training provides an overview of the Fire and Life Safety Plan. It covers all sections of the plan to better understand the requirements set under the Virginia Statewide Fire Prevention Code. In addition, specific training is offered for:

- Flammable and Combustible Liquids
- Resident Hall Fire Safety Training

## **FIRE AND LIFE SAFETY PROGRAM**

- Hot Work Training
- Compressed Gas Cylinders Training

### **Fire Prevention Planning Training**

The primary purpose of fire prevention planning is to prevent fires from starting. Fire prevention procedures are for preventing, detecting and extinguishing fires. Fire prevention starts with identifying the fire hazards. Each department, area or building is required to develop and implement a Fire Prevention Plan. This training will help the participants identify hazards in their workplace and plan to prevent or in the event of a fire react to the emergency. The training includes hands on group workshops to help with this process.

### **Public Assembly Emergency Procedures - Training for Employees and Volunteers**

Employees or attendees of assembly occupancies must be trained in emergency evacuation procedures/crowd management and practice this training during drills. They must also be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment, where provided. EHSS personnel are available to provide training for all persons with this responsibility.

### **Portable Fire Extinguishers Training**

Portable fire extinguishers (PFE's) are found in most buildings on campus. When used properly, PFE can save lives and property by putting out a small fire or containing it until the fire department arrives. PFE however, are not designed to fight a large or spreading fire. Extinguishers can be used to allow you to safely exit a burning building.

## FIRE AND LIFE SAFETY PROGRAM

<b>Employee duties during evacuation</b>	Employees are expected to evacuate the building, <b>unless</b> it is specifically part of their job description that they will attempt to control a fire. However, if you are properly trained to use a PFE, can evaluate the situation and extinguish a fire safely with no personal risk, then you may do so. The choice is yours.
<b>Employees required to be trained on Portable Fire Extinguishers</b>	Certain employees are required to attend portable fire extinguisher safety training: <ul style="list-style-type: none"><li>- Those who have specific duties as first responders as part of an Emergency Action Plan;</li><li>- Ushers and attendants at large public gatherings;</li><li>- Those who work in laboratories;</li><li>- Those who inspect the extinguishers;</li><li>- Those involved in construction and renovation work, especially those performing utility and “hot work” (e.g., welding, cutting, brazing, and grinding).</li><li>- Powered industrial truck operators.</li><li>- Those who work at fuel dispensing stations.</li></ul>
<b>Employees required to do monthly inspections on Portable Fire Extinguishers</b>	The portable fire extinguishers in common areas are required to be inspection by housekeeping staff. The portable fire extinguishers in other non-general areas and lab spaces are required to be inspected by designated personnel for the area.
<b>Portable Fire Extinguisher training</b>	This training is offered through EHSS upon request. All Virginia Tech employees that must have PFE training are required to attend a training session every two years. Blackboard computer training is available in addition to “hands-on” training sessions. Please call 231-8759 or email: <a href="mailto:safetytraining@vt.edu">safetytraining@vt.edu</a> for additional information
<b>Classifications of Fire</b>	There are four main classifications of fire: <u>Class “A”</u> or ordinary combustibles, such as wood, paper, plastic, rubber, and clothe. <u>Class “B”</u> or flammable and combustible liquids, such as gasoline, oil, grease, tar, oil-based paint, lacquer and flammable gases. <u>Class “C”</u> Energized electrical equipment, including wiring, fuses boxes, circuit breakers, machinery and appliances. <u>Class “D”</u> or combustible metals, such as zirconium, titanium, potassium, and magnesium. <u>Class “K”</u> Wet chemical extinguishers designed specifically for kitchen fires involving high temperature cooking oils used for deep frying, grilling and other types of cooking.



## FIRE AND LIFE SAFETY PROGRAM

<b>Classifications of Portable Fire Extinguishers</b>	PFE's come in many types, sizes, shapes, and colors. The three most common types of PFE on campus are: <u>ABC Multi-Purpose Dry Chemical, Stored Pressure Type</u> - These are the <b>most commonly found</b> extinguishers on campus and can be used on all classes of fire except combustible metals. They range in size from 2 ½ to 20 lbs., and have an effective range of 5 to 20 feet. <u>Water Extinguisher</u> - These are for Class A fires only, and have an effective range of 30 to 40 feet. <u>Carbon Dioxide (CO2) Extinguisher</u> - These are for small Class B or C fires only. They range in size from 5 to 20 lbs., and their effective range is 3 to 8 feet.
<b>Safe Use of Portable Fire Extinguishers</b>	If you do fight the fire, remember the word <b><u>PASS</u></b> <b>PULL</b> the pin. <b>AIM</b> the hose or nozzle at the base of the fire <b>SQUEEZE</b> the handle to release the extinguishing agent. <b>SWEEP</b> from side to side. Keep the extinguisher aimed at the base of the fire and sweep back and forth until it appears to be out. Watch the fire area. If fire breaks out again, repeat the process.
<b>Precautions for fighting a small fire</b>	<i>Before</i> you begin to fight a small fire: <ul style="list-style-type: none"><li>· Make sure everyone has left, or is leaving, the building.</li><li>· Make sure the fire department has been called.</li><li>· Be certain that the fire is confined to a small area, such as a wastebasket, and that it is not spreading beyond the immediate area.</li><li>· Be sure that your back is to a safe and unobstructed exit to which the fire will not spread.</li></ul> Be sure that your extinguisher is the proper size and type for the fire at hand and that you have been trained in how to use it.

It is reckless to fight a fire with an extinguisher in any other circumstances. Instead, leave the area immediately, close off the area and leave the fire for the fire department.

To obtain assistance with the development and delivery of any of the above training contact the EHSS Safety Educator at 231-8759 ([safetytraining@vt.edu](mailto:safetytraining@vt.edu)) or Fire Safety Engineer at 231-9068 ([firesafe@vt.edu](mailto:firesafe@vt.edu)). If you need to order a portable fire extinguisher for your area, please contact Physical Plant Fire Protection Specialist at 231-7835 or Fire Safety Engineer at 231-9068.

## References and Resources

### Published References

Virginia Board of Housing and Community Development. (2003). "Virginia Statewide Fire Prevention Code".

## FIRE AND LIFE SAFETY PROGRAM

Virginia Board of Housing and Community Development. (2003). "Virginia Statewide Uniform Building Code".

Occupational Safety and Health Administration. "1910 Occupational Safety and Health Standards"

Occupational Safety and Health Administration. "1926 Safety and Health Regulations for Construction"

### Resources

Tolga Durak, MS, CSP, CFPS, CBO, CFO Fire Engineering & Life Safety Programs Coordinator, EHSS	231-9068 <a href="mailto:firesafe@vt.edu">firesafe@vt.edu</a>
Jeremy Williams Fire Protection Inspector, EHSS	231-4207 <a href="mailto:jewilli6@vt.edu">jewilli6@vt.edu</a>
Anthony Mills Occupational Safety Educator, Senior	231-8759 <a href="mailto:rmmiller@vt.edu">rmmiller@vt.edu</a>
Zack Adams, PE, CSP, CIH Co-Director—Occupational Safety & Health, EHSS	231-5985 <a href="mailto:adamsz@vt.edu">adamsz@vt.edu</a>
Mike Moore Fire Protection Specialist, Physical Plant	231-4300 <a href="mailto:mimoore@vt.edu">mimoore@vt.edu</a>
David Rettig Compliance Officer, Residential Programs	231-9397 <a href="mailto:drettig@vt.edu">drettig@vt.edu</a>
David Kidd, MCO Building Code Engineer, Renovations	231-9578 <a href="mailto:dmkidd@vt.edu">dmkidd@vt.edu</a>
Virginia Tech Fire Safety Advisory Committee	The advisory committee has been established to encourage all those on and off campus with fire safety responsibilities to come together to discuss our mutual concerns and issues regarding fire safety. Meetings are held once each month. For additional information about this committee, contact the Fire Safety Engineer at <a href="mailto:firesafe@vt.edu">firesafe@vt.edu</a> .

**Appendix A (Fire Drill Report Form)**

**FIRE AND LIFE SAFETY PROGRAM**

# Fire Drill Reporting Form

Administered by Environmental Health and Safety Services  
 This form must be kept to comply with OSHA regulations and the  
 Virginia Statewide Fire Prevention Code.  
 Please send a copy to EHSS (0423).

<b>Date of Drill</b>	
<b>Time of Drill</b>	
<b>Location of Drill</b>	
<b>Building/Floor/Area Warden</b> (Print Name)	
<b>Weather Conditions</b>	
<b>Number of Occupants</b>	
<b>Total Time to Evacuate</b> (minutes)	
<b>Fire Warden Report</b> (Good/Bad/Problems)	
<b>Other Information or Concerns</b>	

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_  
 Building or Department Fire Warden

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_  
 Fire Safety Engineer or  
 Fire Protection Inspector

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_  
 Witness

(Any, or all, of the above can complete this form.)

**Appendix B (Fire Prevention Plan Template)**

**FIRE PREVENTION PLAN**

---

(Department Name)

## FIRE AND LIFE SAFETY PROGRAM

**Policy Statement:** Fire prevention starts with identifying fire hazards. All members of the university community – faculty, staff, students and visitors – have a personal obligation to be aware of fire hazards and to reduce or eliminate the risk of fire on our campus.

**Fire Prevention Plan Coordinator:** The Department of \_\_\_\_\_ Fire Prevention Plan Coordinator is \_\_\_\_\_ (name and/or job title). This person should be contacted with any questions about this Fire Prevention Plan.

1. The procedure to reporting a fire or other emergency.
2. The life safety strategy and procedure for notifying, relocating, or evacuating occupants.
3. Site plans indicating the following:
  - a. The occupancy point.
  - b. The locations of fire hydrants.
  - c. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
  - a. Exits
  - b. Primary evacuation routes.
  - c. Secondary evacuation routes.
  - d. Accessible egress routes.
  - e. Areas of refuge.
  - f. Manual fire alarm boxes.
  - g. Portable fire extinguishers.
  - h. Fire alarm panel and controls.
5. A list of major fire hazards associated with the normal use and occupancy of the area, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.



**FIRE AND LIFE SAFETY PROGRAM**

8. Training All employees will review, upon initial assignment, those parts of the fire prevention plan that they must know to protect themselves in the event of a fire emergency. The written plan must be kept in the workplace and made available for employee review.

The training plan for Department \_\_\_\_\_ will be:

9. The Fire Prevention Plan will be located \_\_\_\_\_ and has been reviewed annually on:

---

Additional information and/or assistance for fire prevention planning can be obtained by contacting the Fire Safety Engineer (extension 1-9068) or the Fire Protection Inspector (extension 1-4207) or email [firesafe@vt.edu](mailto:firesafe@vt.edu)

## **Appendix C (Example of a Hot Work Permit)**

# HOT WORK PERMIT

**BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?  
IS THERE A SAFER WAY?**

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Torch Applied Roofing and Welding.

## PART 1

### INSTRUCTIONS

#### 1. Firesafety Supervisor:

- A. Verify precautions listed at right (or do not proceed with the work).
- B. Complete and retain Part 1.
- C. Issue Part 2 to person doing job.

### REQUIRED PRECAUTIONS CHECKLIST

- Available sprinklers, hose streams and extinguishers are in service/operable.
- Hot Work equipment in good repair.

#### Requirements within 35 ft (11 m) of work

- Flammable liquids, dust, lint and oily deposits removed.
- Explosive atmosphere in area eliminated.
- Floors swept clean.
- Combustible floors wet down, covered with damp sand or fire-resistive sheets.
- Remove other combustibles where possible. Otherwise protect with fire-resistive tarpaulins or metal shields.
- All wall and floor openings covered.
- Fire-resistive tarpaulins suspended beneath work.
- Protect or shut down ducts and conveyors that might carry sparks to distant combustibles.

#### Work on walls, ceilings or roofs

- Construction is noncombustible and without combustible covering or insulation.
- Combustibles on other side of walls, ceilings or roofs are moved away.

#### Work on enclosed equipment

- Enclosed equipment cleaned of all combustibles.
- Containers purged of flammable liquids/vapors.
- Pressurized vessels, piping and equipment removed from service, isolated and vented.

#### Fire watch/Hot Work area monitoring

- Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.
- Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose.
- Fire watch is trained in use of equipment & in sounding alarm.
- Fire watch may be required in adjoining areas, above & below.
- Monitor Hot Work area for 4 hours after job is completed.

#### Other Precautions Taken:

- .....
- .....

00000053

HOT WORK BEING DONE BY

- EMPLOYEE
- CONTRACTOR.....

DATE \_\_\_\_\_ JOB NUMBER \_\_\_\_\_

LOCATION/BUILDING AND FLOOR \_\_\_\_\_

NATURE OF JOB \_\_\_\_\_

NAME OF PERSON DOING HOT WORK \_\_\_\_\_

**I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.**

SIGNED (Firesafety Supervisor/Operations Supervisor)

<b>PERMIT EXPIRES</b>	DATE	TIME
		AM PM

**NOTE: EMERGENCY NOTIFICATION ON BACK OF FORM. USE AS APPROPRIATE FOR YOUR FACILITY.**



**Appendix D (Example of an Open Flame and Burn Permit  
Application)**

**FIRE AND LIFE SAFETY PROGRAM**



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

**Environmental Health and Safety Services**

459 Tech Center Drive (0423)  
Blacksburg, Virginia 24061  
(540) 231-9198 Fax: (540) 231-3944  
E-mail: firesafe@vt.edu

Date of Activity _____ <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
---

## Open Burning Permit Application

Approval in accordance with the requirements of the Statewide Fire Prevention Code (Sec. F-403.4.2) and written permission from the Environmental Protection Agency is required before the ignition of any open burning upon state owned property. The following are a list of those types of activities requiring an Open Burn Permit :

- recognized range or wildlife management practices
- prevention to control disease or pests
- providing heat for outdoor workers
- bonfires
- indoor religious ceremonies and/or activities involving open flames and/or candles/incense.

**Application must be made in writing at least ten (10) days prior to the request of this permit.**

The following information is required:

Activity: \_\_\_\_\_

Nature and quantity of material to be burned: \_\_\_\_\_

Date of activity: \_\_\_\_\_ Scheduled time of activity \_\_\_\_\_

Location of activity: \_\_\_\_\_

On-site fire-extinguishing equipment to be provided: \_\_\_\_\_

Are personnel adequately trained to use fire-extinguishing equipment? \_\_\_\_\_

If yes, describe training: \_\_\_\_\_

If required, (see second page) written permission has been obtained from the local EPA: \_\_\_\_\_

How will the waste be disposed of after the burn (especially bonfires)? \_\_\_\_\_

Prohibited: Offensive or objectionable burning due to smoke or odor emissions when atmospheric conditions or local circumstances make such fires hazardous. The Fire Official reserves the right to order the extinguishments of any open burning that creates or adds to a hazardous or objectionable situation.

Name of Sponsoring Organization: \_\_\_\_\_

Contact person (print): \_\_\_\_\_ Email and phone: \_\_\_\_\_

Applicant _____	(Signature)	(Date)
VPI Fire Safety Representative _____	(Approval signature)	(Date)
Additional comments or requirements: _____		

**FIRE AND LIFE SAFETY PROGRAM**

**Procedure** - Complete side one, then read and sign side two of this form, and submit it to the University Fire Safety Engineer at Environmental Health & Safety Services department (0423) or email it to [firesafe@vt.edu](mailto:firesafe@vt.edu).

**Restrictions**

**Location** - The location for any open burning shall not be less than 50 feet from any structure, and provisions shall be made to prevent the fire from spreading to within 50 feet of any structure. Fires in approved containers shall be permitted, provided that such fires are not less than 15 feet from any structure.

Extreme caution should be used to prevent the ignition of any nearby trees, foliage, or grassland, vehicles or equipment, or any other object adjacent, above, or below the area of the fire.

**Materials** - Open burning shall not be utilized for waste disposal purposes, and it shall be minimized in size for the intended purpose, and the fuel shall be chosen to minimize the generation and emission of air contaminants.

Fuel for a bonfire shall consist only of seasoned dry firewood and shall be ignited with a small quantity of paper. Do not use flammable or combustible liquids or gases, reactive chemicals, rubber, plastics, or other unapproved methods of ignition.

**Attendance** - Any open burning shall be constantly attended until the fire is extinguished.

**Fire suppression** - One of the following, or the equivalent, shall be immediately available and ready for use in the area of the fire:

- 1) At least one portable fire extinguisher with a minimum 4-A rating (10-lb. ABC multi-purpose dry chemical);
- 2) Two portable fire extinguishers with a minimum 2-A rating (5-lb. ABC dry chemical or 2 1/2 gal. pressurized water);
- 3) Some other approved on-site fire extinguishing equipment, such as dirt, sand, or water barrel, garden hose or water truck.

**Training:** Portable fire extinguisher training is required for those supervising the activity. If you have not received this training from Environmental Health and Safety Services, contact Robin Miller at 231-2341 or email her at [rmmiller@vt.edu](mailto:rmmiller@vt.edu), to register for a training class.

**Bonfire size and duration** - A bonfire shall not be more than 5 feet by 5 feet by 5 feet in dimension and shall not burn longer than 3 hours. The size and duration of the bonfire shall not be increased, except by special approval from the Fire Official.

I have read these restrictions. I understand them and agree to abide by them to the best of my ability.		
Applicant: _____	(Signature)	(Date)

(revised 07/09/02)

**Appendix E (Tent/Temporary Structure Fire Inspection Form)**





FIRE AND LIFE SAFETY PROGRAM



Environmental Health & Safety Services  
**TENT / TEMPORARY STRUCTURE  
 FIRE SAFETY INSPECTION**

Date of Activity _____
<input type="checkbox"/> Approved
<input type="checkbox"/> Disapproved

Activity: \_\_\_\_\_

Name of Sponsoring Organization: \_\_\_\_\_

Date of activity: \_\_\_\_\_

Name of Tent Rental Company and onsite supervisor: \_\_\_\_\_

Scheduled time of activity \_\_\_\_\_

Location of activity: \_\_\_\_\_

**All temporary facilities including tents, stages, and similar structures, which are erected on Virginia Tech property shall be designed, constructed, erected, and used in accordance with the VUSBC and the VSFPC.**

• **Tents under 900 sq feet, approved by VTEHSS and/or the State Fire Marshall's office (except for recreational camping tents):**

**On-site Requirements:**

- At least one multi-purpose (ABC) fire extinguisher for each tent with minimum 4-A rating, or two with minimum 2-A rating each.
- Tent is placed away from all buildings minimum 20 feet.
- Tent is not blocking any means of egress from other structures, sidewalks or emergency fire lanes.
- Cooking/open flames are not permitted. State Code Official's prefer electrical devices or move cooking away from tent area a minimum of 20 feet.

• **Tents over 900 sq feet or more than 50 occupants, approved by VTEHSS and/or the State Fire Marshall's office:**

- Tent application (G.S. Form E&B CO-13.3 Tent/Stage) has been submitted and approved by Virginia Department of General Services, Division of Engineering and Buildings (DEB). This includes Miss Utility contacted and location of utilities marked. (University Policy 5406)
- Detailed site plan.
- Certificate of flame resistance,
- Detailed floor plan, including furniture and equipment arrangement within the tent or structure indicating egress paths and exits.
- VT map annotating where site is in reference to the campus as a whole.

**On-site Inspection:**

- At least one multi-purpose (ABC) fire extinguisher for each tent with minimum 4-A rating, or two with minimum 2-A rating each.
- Tent is placed away from all buildings minimum 20 feet. *(The State Code Officials will determine all exception. If you foresee that this is a problem further explanation may be required, such as: structure of building posing the problem, tent not for assembly purpose, indicate that if tent is moved will obstruct egress or emergency fire lanes, and distance of cooking surfaces from building posing the problem).*
- Tent is not blocking any means of egress from other structures, sidewalks or emergency fire lanes.
- If an air supported tent, all items in the tent are a minimum of 3 feet from the walls of the tent.
- Cooking with open flames and all other unprotected open flames are not permitted. State Code Official's required 20 feet distance between the electrical cooking device and cooking activity away from tent area. Electric warming trays and other warming devices are permitted.
- All tents anchors and structural supports are properly secured.
- Comments:

Offensive or objectionable activity that creates an unsafe condition is prohibited. The Fire Official reserves the right to order the activity to cease in the event that it creates or adds a hazardous or objectionable situation.

VPI Fire Safety Representative \_\_\_\_\_ (Approval signature) \_\_\_\_\_ (Date)

Contact Sandra Kulik, CSP, CFPS, Fire Safety Engineer at 231-9198 or email [firesafe@vt.edu](mailto:firesafe@vt.edu) for additional information. (revised 7/9/02)

**Appendix F (Special Effects Permit)**

**FIRE AND LIFE SAFETY PROGRAM**



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

Date of Activity _____ <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
---

**Environmental Health and Safety Services**

459 Tech Center Drive (0423)  
Blacksburg, Virginia 24061  
(540) 231-9198 Fax: (540) 231-3944  
E-mail: firesafe@vt.edu

**Special Effects Permit Application**

Approval in accordance with the requirements of the Statewide Fire Prevention code is required prior to the use or discharge of any and all special effects use on state property. The following is a list of those types of activities requiring a Special Effects Permits:

- Smoke and haze machines
- Fog machines
- Indoor and outdoor use of gunpowder or other small amounts of explosives
- Special use of temporary electrical installations
- Stage sets that are comprised of large amounts of combustible materials
- Stage weapons and fire arms.

**Application must be made in writing at least ten (10) days prior to the request of this permit.**

The following information is required:

Activity: \_\_\_\_\_

Nature and quantity of special effects materials to be used \_\_\_\_\_

Date of activity: \_\_\_\_\_ Scheduled time of activity \_\_\_\_\_

Location of activity: \_\_\_\_\_

On-site fire-extinguishing equipment to be provided: \_\_\_\_\_

Are personnel adequately trained to use fire-extinguishing equipment? \_\_\_\_\_

If yes, describe training: \_\_\_\_\_

Prohibited: Offensive or objectionable burning due to smoke or odor emissions when atmospheric conditions or local circumstances make such special effects usage hazardous. The Fire Official reserves the right to order the extinguishments of any open special effects usage that creates or adds to a hazardous or objectionable situation.

Name of Sponsoring Organization: \_\_\_\_\_ Contact person (print): \_\_\_\_\_

Email: \_\_\_\_\_ Phone # \_\_\_\_\_

Applicant _____	(Signature)	(Date)
VPI Fire Safety Representative _____	(Approval signature)	(Date)
Additional comments or requirements: _____		
_____		

## **Appendix G (Planning and Management Guide for Public Assembly Events)**

## PLANNING AND MANAGEMENT GUIDE for PUBLIC ASSEMBLY EVENTS

### Information Contained in this Document

Decorations and Theatrical Scenery	Exit Notice (Announcement)	Insurance	Outdoor Spaces	Required Permits and Approvals, Summary
DES Inspection Services	Expositions	Large Scale Events	Post Event Procedures	Room Capacity
Emergency Medical Services	Fire and Life Safety Planning Assistance	Occupational Safety and Health	Set-up Plans	Event Planning Information, General
Fog Machines	Open Fires (Outdoor)	Pyrotechnics	Special Amusement Buildings	Tents
Event Staff/Crowd Managers	Generators	Open Flames	Public Assembly Self-Check Form	Exits

### Information and Assistance

<b>General Information for Event Planning</b>	<p>Planning for all events should begin by contacting the University Unions and Student Activities (UUSA) Event Services Office at phone 231-5005 or <a href="http://www.uusa.vt.edu/eventpln/index.htm">http://www.uusa.vt.edu/eventpln/index.htm</a></p>		
<b>Fire and Life Safety</b>	<p>All persons planning public assembly events are encouraged to contact EHSS Fire Safety personnel for information and assistance. Consultation is available by telephone, email, meeting, and at the event site.</p> <p>In order to comply with the requirements of the Virginia Statewide Fire Prevention Code, it is necessary for EHSS Fire Safety personnel and/or the State Fire Marshal's Office (SFMO) to make certain approvals as noted in these guidelines. Required approvals and inspections should be requested as far in advance as possible.</p> <p>The Fire Safety Engineer and/or Inspector are required to be present for certain events such as indoor pyrotechnics, outdoor fireworks, and large scale events. The sponsors and/or Virginia Tech Police Department (VTPD) also provide services for events that may have security concerns upon request.</p> <p>There is <b>no charge</b> for event planning, consultations, or random inspections performed by EHSS. A fee <i>may</i> be charged when the VTPD or other responsible departments need to provide services after normal working hours or when additional personnel are needed to oversee an event.</p> <table style="width: 100%; margin-top: 10px;"> <tr> <td style="text-align: center;">Fire Safety Engineer (540) 231-9068</td> <td style="text-align: center;">Fire Protection Inspector (540) 231-4207</td> </tr> </table>	Fire Safety Engineer (540) 231-9068	Fire Protection Inspector (540) 231-4207
Fire Safety Engineer (540) 231-9068	Fire Protection Inspector (540) 231-4207		

**FIRE AND LIFE SAFETY PROGRAM**

	(540) 231-3944 FAX Email: <a href="mailto:firesafe@vt.edu">firesafe@vt.edu</a>
<b>Definition of Public Assembly</b>	Public assembly events involve various risk factors associated with having large numbers of people in one location. The primary risk factors are the high occupant density; occupants that are not familiar with the building, and in some cases reduced lighting levels within the venue. These risks can be managed through proper event planning and management.  The Virginia State Fire Prevention Code defines public assembly occupancy as follows:  <i>Assembly occupancies include but are not limited to, all buildings or portions of buildings, used for gathering together <b>50 or more persons</b> for such purposes as deliberation, worship, entertainment, eating, drinking, amusement, or awaiting transportation.</i>  Examples of assembly occupancies found on the Virginia Tech campus include, but are not limited to, large meeting rooms and classrooms, auditoriums with fixed or loose chair seating, multi-purpose rooms, concert halls, theaters, sports arenas, field houses, restaurants, bars, and libraries.
<b>Tents Are Considered Buildings</b>	Tents must meet most of the same requirements as buildings. Please see the section on Tents <b>and</b> Virginia Tech Policy and Procedure No. 5406 - <i>Requirements for Temporary Facilities/Tents/ Stages</i> at: <a href="http://www.policies.vt.edu/5406.pdf">http://www.policies.vt.edu/5406.pdf</a> .
<b>Outdoor Spaces</b>	Enclosed open areas such as Lane Stadium must meet the same requirements as buildings. Fenced open areas must have at least two exits— or more, depending upon the number of people within the enclosure. The VT Building Code Engineer must certify bleachers, grandstands and platforms as structurally sound if they are constructed on-site.
<b>Large Scale Events</b>	All events intended to, or that have the potential to, attract large crowds must be coordinated through a number of university departments and divisions. These include but are not limited to: UUSA-Events Planning, VTPD, Parking Services, Facilities Management, Virginia Tech Rescue Squad, Schiffert Health Center, and EHSS.

**Fire and Life Safety Planning and Management Information**

<b>Room Capacity</b>	Information on campus room capacities may be obtained from UUSA – Event Planning, the Registrar’s Office or Facilities Management. EHSS Fire Safety personnel determine the legal capacities according to Virginia Statewide Fire Prevention Code (SFPC) and Statewide Uniform Building Code for existing buildings/areas. Be aware that the occupant load is the maximum capacity. Please contact EHSS Fire Safety to affirm the maximum occupant load for a particular space.
<b>Exits</b>	The number of exits required from the room/area is based on the capacity. Please contact EHSS Fire Safety to affirm the number of exits required for a space involving a particular activity.
	Exits must remain unobstructed and provide clear access to the outside at all times. Wires or cables are not permitted to be placed in



## FIRE AND LIFE SAFETY PROGRAM

	front of exits or on steps. All wires or cables on floors must be properly taped down or covered to avoid creating tripping hazards.
<b>Set-up Plans</b>	The placement of stages, seats, equipment (including wiring), and security arrangements affect the exits and access to exits.
	Standard set-up plans exist for the Cassell Coliseum, Lane Stadium, various assembly areas in Squires Student Center, Donaldson Brown Hotel and Conference Center, Rector Field House, and the dining halls. The management of the respective facilities maintains these plans. Set-up plans for other spaces, spaces that are not routinely used for public assembly (including lobbies and atriums), or any plans that are different from existing standard plans must be reviewed in advance by EHSS Fire Safety personnel for conformance with the SFPC.
	With assembly events of more than 200 persons where temporary seating will be used, it is recommended that the seating be fastened together in groups of three and not exceeding seven. The VT Building Code Engineer must certify temporary bleachers and platforms as structurally sound.
	The use of “festival” style seating (e.g., general admission without the use of actual seats) is prohibited for venues that have an occupant load of 1000 or greater.
<b>Special Amusement Buildings</b>	Any building or portion of a building that is permanent, temporary, or mobile that is occupied for amusement, entertainment or educational purposes and is arranged such that the means of egress to an exit is not readily apparent due to visual or audio distractions is a ‘special amusement building’. Examples include haunted houses and carnival amusement trailers. EHSS Fire Safety personnel must approve all special amusement venues; guidance on this issue can be obtained by calling the Fire Safety Engineer at 231-9068.
<b>Expositions</b>	Expositions of products or other displays have a number of special requirements. Contact EHSS Fire Safety personnel for guidance on this issue.
<b>Exit Notices (Announcements)</b>	<p>The person in charge of a theater or place of assembly is required to call the attention of everyone present, immediately before the beginning of an event, to the location of exits and to state that the exits are not locked. The person in charge must also announce the following:</p> <p style="text-align: center;"><u><i>“Notice. For your own safety, look for the nearest exit. In case of emergency, walk, do not run, to that exit.”</i></u></p> <p>This requirement can be met by any of the following methods:</p> <ol style="list-style-type: none"> <li>1. Notices made orally</li> <li>2. Notices shown on the cinema screen</li> <li>3. Notices printed on the back of a program (by itself, in 1/4 inch high letters)</li> <li>4. Notices displayed on a fixed sign visible from all points in an assembly room.</li> </ol>
<b>Decorations and Theatrical Scenery</b>	All materials used for decorations and theatrical scenery, including the drop used behind stages during concerts, must be Class “A” rated for

**FIRE AND LIFE SAFETY PROGRAM**

	<p>flame spread. Foamed plastics and materials must meet the requirements of the SFPC; if such materials are to be used, please contact EHSS for guidance. Sponsors, promoters, or other production personnel must have documentation that certifies that the material meets this requirement. EHSS Fire Safety personnel may ask to see these certificates prior to the start of an event. If there is no documentation to certify that the material is acceptable, EHSS will either disapprove this material and ask for an immediate removal or require additional testing conducted by an approved institution/laboratory. Decorations must not block exits or fire safety equipment, nor impede the function of the fire curtain if one is present.</p>
<b>Open Flames</b>	<p>EHSS Fire Safety personnel must approve open flames used during public assembly events for any purposes other than decoration and cooking (unless otherwise noted). This includes, but is not limited to, any open flame used in the course of a performance. (See Open Flames and Burning section in the Fire and Life Safety Program.)</p> <p>Open flames used for decoration and cooking must comply with the table below. Users are required to have adequate safety precautions and are encouraged to contact EHSS Fire Safety personnel for consultation.</p>
- Candles and Decorative Devices	<p>Candles and decorative devices have a number of special requirements. Contact EHSS Fire Safety personnel for guidance on this issue.</p>
- Cooking	<p>Equipment fueled by small heat sources that can be readily extinguished by water, such as candles or alcohol-burning equipment, including solid alcohol may be used.</p>
	<p>Flamed dishes, such as cherries jubilee or crepe suzette, may be used, provided that EHSS Fire Safety personnel have approved the precautions that will be taken.</p>
	<p>Small portable LP gas cooking equipment (less than 2 lbs) may be used under the following conditions:</p> <ul style="list-style-type: none"> <li>· Equipment must be listed for indoor use in commercial restaurants by an approved listing agency such as Underwriters Laboratories (UL) or Factory Mutual Systems (FM).</li> <li>· Equipment must be used in strict accordance with the manufacturers and listing agency’s instructions including replacement fuel and parts.</li> <li>· Employees working with portable butane gas stoves must be instructed on the proper use of the stoves. A trained employee must be in attendance at all times that the stoves are used by customers.</li> <li>· Portable gas stoves, when used, must be placed on noncombustible surfaces and kept clear of surrounding combustibles</li> </ul>
<b>Performing Arts</b>	<p>Small open flames used by outdoor performers, such as jugglers, are approved on a case-by-case basis. Contact EHSS Fire Safety personnel to arrange a review of your proposal. Performers must be prepared to demonstrate their safety procedures and may be required</p>

## FIRE AND LIFE SAFETY PROGRAM

	to have certificates of insurance.
<b>Open Fires (outdoors)</b>	Any open fire, with the exception of small-contained cooking fires, requires an Open Flames and Burning Permit in accordance with the Virginia Statewide Fire Prevention Code (Sec. F-403.4.2) and written permission from EHSS. Additional information on Open Burn Permits can be found on page 24.
	Open fires are limited to the dimensions of 5' X 5' X 5' and must be at least 50 feet from buildings and other exposures. Open fires may also need approval by Facilities Management Grounds Department and/or the Virginia Department of Environmental Quality. Open fires are limited to the hours between 4:00pm - 12:00 midnight. Other environmental restrictions may also apply. The Open Burn Permit includes directions for obtaining necessary approvals.
	Cooking fires, which do not require a permit, must be at least 15 feet from buildings and be located so that smoke does not enter buildings.
<b>Pyrotechnics/ Fireworks</b>	The indoor and outdoor use of pyrotechnics is strictly regulated and requires proper approval and permits. See page 27 for information.
<b>Fog Machines</b>	<p>The use of fog machines during a performance, dance, or other public assembly event may activate smoke detectors and/or obscure exits. Areas where fog machines are going to be used must be evaluated so that accidental activation of the fire alarm system or obscuring of exits is avoided. Contact EHSS Fire Safety personnel to arrange an evaluation of your proposal. In most cases a Special Effects Permit will need to be secured for the activity.</p> <p>In some cases, smoke detectors may need to be temporarily shut down in the area where a fog machine is used. Facilities Management needs at least a 4-week advance notification to schedule an outage. A "fire watch" during the period in which the smoke detectors are temporarily out of service may also be required.</p>
<b>Event Staff/ Crowd Managers</b>	Crowd Managers are responsible for maintaining clear exits, assuring that there is no overcrowding, initiating a fire alarm if necessary, directing occupants to exits, and providing general fire and life safety awareness. A minimum of 1 Crowd Manager is required for every 250 occupants. Crowd Managers may be comprised of ushers, house managers, gate personnel, security personnel, police aides, or police officers. Employees or attendees of assembly occupancies must be trained in emergency evacuation procedures and practice this training during drills. They must also be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment, where provided. EHSS personnel are available to provide training for all persons with this responsibility.
<b>Post Event Procedures</b>	At least one person should be responsible for completing a post event check. Items to check for include verifying that: all smoking materials (where smoking is allowed) and open flames have been safely extinguished (where open flames are approved); unnecessary electrical equipment has been turned off; and, any obviously hazardous condition has been corrected. This is extremely important in Greek houses and other residential facilities.

## FIRE AND LIFE SAFETY PROGRAM

<b>Generators</b>	Generators must meet all electrical code requirements including proper grounding. All wires that may pose a tripping hazard must be covered or otherwise secured. Generators must be located so that exhaust does not enter buildings or tents.
<b>Insurance</b>	Proof of insurance is required for outside groups/events that come to the university. Events sponsored by university student groups that pose substantial risks to non-university participants (i.e., auto rallies, car smashing, fire jumping) may also require proof of insurance. Insurance issues may be handled as part of a contract for events such as concerts. The Insurance & Risk Management Office (540/231-7439) can provide information on University insurance issues.
<b>Emergency Medical Services (EMS)</b>	As an organizer of an event on campus, you must assure that emergency services (e.g. police, rescue squad, fire department) are notified in advance and can be summoned in the event of an emergency. For events where a public or pay telephone is not immediately accessible, you are expected to assure that a cell phone or similar means is available on site to summon emergency services.
	Organizers of events should consider whether it would be prudent to have emergency medical services on standby at the event. If you wish such coverage, you must contact the Virginia Tech Rescue Squad (VTRS) at least 14 days in advance of the event. The decision to provide stand-by coverage is at the discretion of the VTRS. The form to request the services of the VTRS is available at <a href="http://filebox.vt.edu/org/vtrescue/Standby.html">http://filebox.vt.edu/org/vtrescue/Standby.html</a>
	The university may require that EMS be available for certain size/type events. The number and level of EMS required will be determined by the VTPD, Schiffert Health Center and VTRS in consultation with EHSS during pre-event planning. Events of over 2000 or 7000 persons will generally be required to have a minimum of one or two ambulance(s) on-site respectively.

## SUMMARY OF REQUIRED PERMITS AND APPROVALS RECEIVED THROUGH EHSS - FIRE SAFETY

Remember all events must first be initiated through UUSA Events Planning

ITEM	REQUIRED
Set-up Plans	<ul style="list-style-type: none"> <li>- EHSS Fire Safety and/or</li> <li>- Occupational Safety assistance.</li> </ul>
Indoor Pyrotechnics/Outdoor Fireworks	<ul style="list-style-type: none"> <li>- State Fire Marshal Office approval for a Pyrotechnics/Fireworks Permit</li> <li>- EHSS Fire Safety notification</li> </ul>
Open Flames (indoor)	<ul style="list-style-type: none"> <li>- EHSS Fire Safety approval for an Open Burn Permit</li> </ul>
Open Fires (outdoor)	<ul style="list-style-type: none"> <li>- EHSS Fire Safety approval for an Open Burn Permit and</li> <li>- VT Grounds Department approval</li> </ul>
Tents	<ul style="list-style-type: none"> <li>- Flame retardant certification,</li> <li>- Structural integrity certification,</li> <li>- State Tent Permit required, (if size is over 900 square feet)</li> <li>- Fire Inspection after erection but before use.</li> </ul>
Decorations	<ul style="list-style-type: none"> <li>- Flame retardant certification,</li> <li>- Structural integrity certification,</li> <li>- Fire inspection, as determined by EHSS Fire Safety Division</li> </ul>
Temporary Bleachers, Grandstands, and Seating (Indoor and Outdoor)	<ul style="list-style-type: none"> <li>- Structural integrity certification by the VT Building Code Engineer</li> </ul>
Special Amusement Arrangements	<ul style="list-style-type: none"> <li>- EHSS Fire Safety personnel approval</li> </ul>
Insurance	<ul style="list-style-type: none"> <li>- Certificate for pyrotechnics/fireworks,</li> <li>- Outside groups,</li> <li>- Events with substantial risk</li> </ul>

## FIRE AND LIFE SAFETY PROGRAM

<b>Public Assembly Event Self-Check Form <i>Fire and Life Safety</i></b>	<b>Fire - Police - Rescue 911</b> VTPD Non-emergency (540) 231-6411 EHSS Fire Safety – (540) 231-9068 or 4207
DATE: _____ TIME: _____ LOCATION: _____	
EVENT: _____ PERSON DOING CHECK: _____	
Exit announcement read, displayed or posted? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, arrange to provide the required announcement.)	
Exit doors clear and unobstructed (on both sides)? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions.)	
Exit paths clear and unobstructed all the way to outside? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions.)	
Wires taped down or otherwise secured? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a (If “no”, tape down or otherwise cover the wires.)	
Aisles clear and unobstructed? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions.)	
Exit lights on and unobstructed? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions.)	
Emergency lights unobstructed? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions.)	
Floor set-up approved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a (If “no”, contact EHSS immediately.)	
Fire protection equipment unobstructed? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, remove the obstructions from: – Fire alarm pull stations; – Fire alarm horns, bells or speakers, and strobe lights; fire extinguishers.)	
Decorations non-flammable? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a (If “no”, remove the materials.)	
Use of open flames approved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a (If “no”, extinguish and do not use.)	
Use of pyrotechnics approved? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no” - contact EHSS immediately)	
Crowd managers in place? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, contact EHSS.) - 1 crowd manager for every 250 occupants	
Tents have proper certification and permits if required? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a – Contact EHSS Fire Safety for fire inspection prior to occupancy – Flame retardant certification required at site – Structural integrity	
Emergency Medical Services in place? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, contact the VTRS.)	
Post-event check completed? <input type="checkbox"/> Yes <input type="checkbox"/> No (If “no”, perform post event check.) – Smoking materials safely extinguished (where smoking is allowed) – Approved open flames safely extinguished – Unnecessary electrical equipment turned off – No obvious hazards	

## Index

## FIRE AND LIFE SAFETY PROGRAM

		PAGE			PAGE
<b>A</b>	Aerosol spray cans	12		Fire drill report form	39
	Aisle clearance	9		Fire emergency procedures	3
	Art departments	21		Fire hazards	11
	Assembly Occupancies	8		Fire inspections	27
	Automatic fire alarms	18		Fire lanes	10
	Automotive shops	21		Fire prevention	11
<b>B</b>	Bonfires	23		Fire prevention plan template	68
	Building fire alarms	18		Fire protection systems	18
	Building and renovating space	20,28		Fire-rated doors	13
	Burn permit	23		Fire-resistant barriers	13
<b>C</b>	Campfires	23		Fire safety training	28
	Candles	23		Firestopping	14
	Classes of fire	29		Fire suppression systems	18
	Combustible materials	13		Fireworks	24
	Combustible liquids	43		Flammable and combustible materials	15, 41
	Commercial kitchen hood Fire suppression system	19		Flammable liquids	43
	Contact information	34	<b>H</b>	Hazards	11
	Compressed gas cylinders	17		Hazard Assessment checklist	57
	Corridors	9		Hoarding	13
<b>D</b>	Decorations	13,45		Hot work hazards	12
	Dyers, clothes	21		Hot work permits	22
<b>E</b>	Egress awareness	10		Housekeeping	13
	Egress policy	9	<b>I</b>	Incense	23
	Egress routes (posting)	10		Industrial Shops	21
	Elevator recall	10		Interior finishes	47
	Electrical cords	14	<b>J</b>	Junction boxes	14
	Electrical hazards	14	<b>K</b>	Kitchen hood suppression	19
	Electrical panels	14	<b>L</b>	Landscaping	20
	Electrical outlets	14		Lighting fixtures	14
	Electric space heaters	12	<b>M</b>	Magnetic door hold openers	14
	Emergency action planning (EAP)	4		Manual fire alarm	18
	Emergency Action Plan template	51		Means of egress	9
	Emergency drills	7		Multi-plug adapters	11,14
	Emergency procedure training	31	<b>N</b>	Non-compliant renovation or maintenance	14
	Exit	9	<b>O</b>	On-line information	34
	Exit access	9		Open flames	23
	Exit discharge	9		Overloaded motors and circuits	14
	Extension cords	11,14			PAGE
<b>F</b>	Fans	12	<b>P</b>	Passageways, Clear	13
		PAGE		Portable fans	12
	Fire doors	13		Portable fire extinguishers	19,29
	Fire drills	7		Posting egress routes	10
				Public assembly	8

## FIRE AND LIFE SAFETY PROGRAM

	Public assembly training	31
	Public assembly event checklist	97
	Published sources	33
	Pull stations	18
	Pyrotechnics	24
<b>R</b>	Regulations	33
	References	33
	Renovating building space	14
	Residence halls	27,28
	Resources	33
<b>S</b>	Sheet metal shops	20
		PAGE
	Smoking	12
	Space heaters	12

	Spray cans	12
	Stairwells	9
	Storage	9,11,13
<b>T</b>	Tents	25
	Temporary structures	25
	Trash accumulation	11,13
<b>W</b>	Washer, clothes	21
	Weather Emergencies	3
	Wiring, switches and plugs	14
	Wood shops	20