UNIVERSITY OF NORTH CAROLINA
SCHOOL OF THE ARTS

FIRE PREVENTION PLAN

Purpose

The University of North Carolina School of the Arts is dedicated to providing a place of employment and learning that is as free as possible from recognized hazards. The Fire Prevention Plan is designed to provide guidelines for identifying, monitoring, and addressing fire safety issues at The University of North Carolina School of the Arts (UNCSA). This Plan describes emergency procedures, fire safety equipment, inspections, training, permits and procedures that will reduce the possibility of fires. The purpose of the Fire Prevention Plan is for the protection of UNCSA Staff, Faculty, Students and Visitors and will be an extension of the employer's overall safety and health program work.

Scope

Few occurrences on campus represent a greater potential for property loss than a serious fire or explosion which is why every institution of higher education should have a comprehensive Fire Prevention Plan. This program takes a proactive approach to recognize and evaluate fire safety risks and institute appropriate steps to remove or reduce them. The rules, regulations, and recommendations in this Plan are based on codes established by the National Fire Prevention Association (NFPA), The North Carolina Fire Prevention Code (NCFC and NCBC), the Building Officials and Code Administration (BOCA), and the Occupational Safety and Health Administration (OSHA) CFR 1910.39.

Responsibilities

The University

It is the responsibility of the University of North Carolina School of the Arts (UNCSA), as part of a comprehensive Health and Safety Plan, to advocate, support and adhere to all Standards of the North Carolina Occupational Safety and Health Administration. By authority delegated from the University Chancellor, the Vice-Chancellor for Finance is responsible for the safety of all University facilities. Under this authority, policies are developed to provide safe teaching, production and design operations, facility services, and housing environments.

EHS Department

The Environmental Health and Safety (EHS) Department provides the Fire Prevention Plan, is available to arrange fire safety related trainings and

consultations and is the campus regulatory liaison with the North Carolina Department of Insurance State Fire Marshall's Office and responsible for remediation of campus wide citations reported on the annual State Fire Marshall Fire and Safety Inspection for the University.

University Deans and Department Heads

The University Dean and Department Heads shall be responsible for ensuring that each of their departments has been given the information on the Fire Prevention Plan and that they advocate all prudent fire safety recommendations within the material. The University Dean and Department Heads shall also be responsible for making sure that each of their supervisors have trained their employees on the proper use of fire safety equipment for their respective work areas and proper emergency evacuation procedures.

Supervisors

Supervisors include anyone who directs the work or activities of others, including students. Managers, faculty instructors and shop managers, if directing the work activities of others, are considered supervisors. Supervisors are responsible for:

1. Providing leadership in promoting health and safety
2. Ensuring that staff and students are provided with a safe environment and receive adequate instruction, and health and safety training for their related areas of work and/or learning
3. Ensuring staff and students understand and follow required procedures and health and safety rules
4. Taking immediate actions to correct unsafe conditions when they become aware of them
5. Complying with university policies, and applicable health and safety standards.

Faculty and Staff

Every university employee (including graduate students paid through the university) is responsible for:

1. Complying with university policies, health and safety rules and procedures
2. Taking an active role in protecting and promoting his/her health and safety.
3. Refraining from activities that may jeopardize the health and safety of others.
4. Reporting immediately to his/her supervisor, when involved in an incident or becomes aware of hazards in the workplace.
5. Complying with Federal, State, local and University health and safety legislation, standards and regulations.

Students

Every university student (high school, undergraduate and graduate) must act with regard to all health and safety rules and follow all instructions and safety precautions conferred upon them by their RA, supervisor or instructor.

Fire Prevention Plan

An effective Fire Safety Program requires sufficient resources to attain code compliance, education of the campus community in fire safety practices, and enforcement to correct fire safety violations. Beyond basic life safety code compliance, fire safety should be a primary component in the design and construction of new or renovated campus buildings. Equally important are the inspection, testing and maintenance of alarm systems, sprinkler systems, emergency signs and lighting, inspection of smoke detectors, and maintenance of fire suppression equipment. Fire risk analyses coupled with fire prevention programs are additional key components of a comprehensive fire safety program. The following guidelines are intended to educate employees on the following fire safety topics:

Fire Detection And Warning Equipment
    Smoke and Heat Detectors
Fire Suppression Equipment:

- Portable Fire Extinguishers
- Overhead Fire Extinguishing Equipment
- Standpipes & Hose Systems
- Automatic Sprinkler Systems

Fire Safety Inspections: Buildings, Equipment, Fire Protection Equipment, State Fire Marshal, Building Plans
Fire Hazards In Academic & Residential Buildings

- Prohibited Items, Safe Appliance Use
- Space Heaters, Safe Holiday Decorations
- Bonfires, Housekeeping
- Exit Ways, Public Assemblies
- Electrical And Mechanical Equipment
- Smoking

Flammable Liquids

- Handling Flammable Liquids Safely

Flammable Gas Cylinders
Welding And Cutting

Fire Drills And Evacuations: See UNCSA Emergency Action Plan

Fire Detection And Warning Equipment

Fire alarms. Manual pull-stations are located along the means of egress, usually at exit doors, to provide a means to alert occupants to a hazardous condition. All alarms in academic buildings and auxiliary buildings are connected to an approved monitoring station.

Testing. Fire alarm systems are installed, repaired, and tested, by outside contractors and the NCSA Campus Police. All horns are checked for operation. Alarms in the various

buildings are tested annually by an outside contractor in accordance with NFPA regulations. Records are maintained in the Facilities Department concerning all tests.

False Alarms. Persons who knowingly turn in a false fire alarm endanger the lives of others and may cause damage to the persons and equipment responding to the false alarm. This is a violation of the State of North Carolina General Statues and may result in jail terms and/or fines. Persons maliciously activating fire alarms or fire detection equipment are subject to possible dismissal from student residence halls, expulsion from school, and/or criminal prosecution.

Investigations. All fire alarms are investigated by the Campus Police Department to determine the cause and to prevent recurrence of the alarm. A fire incidence report is completed by Campus Police.

Smoke Detectors

Smoke detectors respond to both visible and invisible products of combustion and sense fire at the earliest practical detection stage. Since the mid 1970's, when smoke detectors became widely available, there has been a tremendous reduction in the number of fire deaths in the U.S. Smoke detectors are used for numerous fire alarm functions ranging from warning occupants to automatically closing doors.

Locations. Smoke and heat detectors in buildings are located in the various rooms, halls, air handling systems and other public areas. Most smoke detectors are connected to the fire alarm systems and provide many functions such as shutting down air handler units, elevator recall, release of magnetic door holders, and notifying authorities. These detectors are powered by the building fire alarm power source.

Inspection and Maintenance. In order for smoke detectors to function properly they must be periodically cleaned and tested by an outside contractor annually to ensure the sensing chamber and alarm circuits function properly.

Abuse. Misuse, deactivation or tampering with smoke or heat detectors is prohibited. Smoke detectors must not be covered or blocked and nothing may be attached to the detectors.

Heat Detectors

Heat detectors typically operate when a preset temperature has been reached or a rapid temperature change occurs. Heat detectors are sometimes used instead of smoke detectors in certain environments.

Locations. Heat detectors are frequently found in mechanical rooms, storage rooms, attics, and other normally unoccupied areas. These devices are also found in kitchen areas, where smoke and steam could cause smoke detectors to give false alarms.

Inspection and Maintenance. Heat detectors are tested and inspected annually by an outside contractor.

Fire Suppression Equipment

The University maintains the required type fire suppression systems in each building which may include: fire extinguishers, sprinkler systems, standpipes.

Portable Fire Extinguishers

Portable fire extinguishers are the first line of defense against a fire. They are designed to extinguish or contain a small fire or open an escape route. Portable fire extinguishers are not designed to fight a large or spreading fire. Fire extinguishers should be used after the evacuation plan has started. If you know how to use an extinguisher, locate and identify the ones in your area before you need them. The Environmental Health and Safety Department arranges periodic Fire Extinguisher Training for Faculty and Staff Departments through the Winston-Salem Fire Department. Call 336-631-1539 for more information.

Operation. Only persons trained in their proper use should use fire extinguishers. If you have the slightest doubt, get out and call the fire department. Never fight a fire if:

- The fire could block your escape route.
- You are unsure of the proper operation of the extinguisher.
- You are in doubt that the extinguisher is designed for the type of fire or is large enough.

Fight the fire only if all of the following are true:

- The fire department has been notified.
- The area has been evacuated.
- The fire is small and confined to its immediate area of origin (wastebasket, sofa, small appliance).
- You have a way out and can fight the fire with your back to an exit.
- You have the proper extinguisher and know how to use it.
- You use careful judgment and get out fast if the fire starts to spread.

To operate a fire extinguisher, recall the word **PASS:**

- **P** ULL the pin by grasping the extinguisher neck in one hand and removing the pin with the other.
- **A** IM the nozzle, hose, or horn at the base of the fire.
- **S** QUEEZE the handle to release the extinguishing agent.
- **S** WEEP from side to side at the base of the fire until it is out.

Responsibilities. Approximately 400 portable fire extinguishers are located throughout the campus. Facilities Maintenance Department is responsible for inspecting, testing, and having extinguishers refilled or replaced. Contact the

Facilities Department if an extinguisher in your area has been discharged, if it is broken or missing.

Types of fire extinguishers. Fire extinguishers vary in type based upon the extinguishing agent they contain. Every extinguisher is clearly labeled to show the classification of the fires it is effective against. Water fire extinguishers must be labeled to indicate that they cannot be used on electrical fires. Pictograms show in blue the type of fire the extinguisher should be use against. Fires on which the extinguisher should not be used are shown in black with a red slash through the pictogram. Extinguishers may carry labels, pictograms or both.

Class ABC- An ABC fire extinguisher will put out most types of fires that could start on campus- wood, paper, flammable, and electrical fire. These extinguishers are also known as multi-purpose extinguishers. Most extinguishers on campus are classified as ABC.

Class A. Class A fire extinguishers are used to extinguish fires in ordinary combustibles such as wood, paper, cloth, rubber, and plastics. These extinguishers should not be used on electrical, flammable liquid or combustible metal fires. Extinguishers effective against type A fires contain water or a special dry chemical agent.

Class B. Class B fire extinguishers are effective against flammable liquids and gas fires such as solvents, oil, gasoline, and grease. Dry chemical agents, carbon dioxide, and halogenated agents are typically used. Water will only spread a flammable liquid fire and should not be used as an extinguishing agent for Class B fires.

Class C. Class C fire extinguishers are used to extinguish fires involving energized electrical equipment. Non-conducting agents such as dry chemical, carbon dioxide, or halogen compounds are used. Water should never be used to extinguish an electrical fire.

Class D. Class D fire extinguishers contain a special granular formulation that is effective against combustible metal fires such as sodium, potassium, magnesium, and lithium. Normal extinguishing agents must not be used against combustible metal fires because they may increase the intensity of the fire.

Class K. Class K fires extinguishers contain a wet chemical extinguishing agent that is effective in putting cooking oils and grease fires. Class K extinguishers contain a wet chemical agent which turns the cooking oil and fat that is serving as fuel to soap.

Location. Fire extinguishers are installed according to guidelines established by the OSHA CFR 29 1910.157 and NFPA 10. Laboratories, workshops and other

areas in which flammable solvents are used must have an appropriate fire extinguisher. Travel distance between fire extinguishers is normally 50 feet apart.

Access. Fire extinguishers should be readily accessible and the location of the extinguisher should be clearly identified. Fire extinguishers must be mounted off the floor and no higher than five feet. Extinguishers weighing more than 40 lbs. should be mounted no higher than 3 1/2 ft.

Inspections. All portable fire extinguishers are visually inspected each month. Missing, discharged, or damaged fire extinguishers are replaced by the Facilities Department within one week of notification.

Records. Maintenance, hydrostatic testing records and an inventory of all fire extinguishers are maintained by the Facilities Department. Hydrostatic testing and maintenance records are placed on the fire extinguisher.

Training. Training on the proper use of portable fire extinguishers is conducted every year on Safety Day in the Hanes Commons and can also be scheduled for Faculty or Staff Departments by contacting Environmental Health and Safety at 336-631-1539. Minimum participation for group fire extinguisher training is 10, with a maximum of 20 participants.

Maintenance. Every fire extinguisher is inventoried and a record kept showing the inspection date, maintenance date, type of extinguisher, and name of the person performing the maintenance. Upon completion of the routine yearly maintenance the fire extinguisher tag is initialed. Maintenance procedures include a thorough examination of mechanical parts, extinguishing agent and expelling means. Hydrostatic testing is performed within the time specified by the manufacturer according to NFPA 10. Hydrostatic testing is done by an outside contractor.

Misuse. Misuse of fire extinguishers is prohibited per North Carolina Fire Code 901.8 “Removal of or tampering with equipment. It shall be unlawful for any person to remove, tamper with or otherwise disturb any fire hydrant, fire detection and alarm system, fire suppression system, or other fire appliance required by this code except for the purpose of extinguishing fire, training purposes, recharging or making necessary repairs, or when approved by the fire code official.”

Fire extinguishers are not to be removed from their intended locations or discharged unless there is a true fire emergency. Anyone found tampering with a fire extinguisher will be subject to disciplinary action. Report vandalism and/or discharged fire extinguishers to the Facilities Office 336-770-3323 or Campus Police 336-770-3362.

Overhead Fire Extinguishing Equipment

Kitchen Fire Protection Systems.

Kitchen hood systems consist of cylinders of dry or wet extinguishing agent connected by piping to discharge nozzles. The nozzles are located in the kitchen hoods over cooking appliances such as grills and deep fat fryers. The extinguishing agent is activated by manual activation of a pull station or discharge button, or automatic activation of heat activated fusible links in the hood. Hood systems will activate the building Fire Alarm. Dry chemical systems act the same way as ABC dry powder fire extinguishers. Powder from these systems smothers the fire and will cover everything in the kitchen. A kitchen can be put out of operation for several hours. Wet chemical systems use a foamy material similar to soap that smothers and cools the fire. The wet extinguishing agent generally stays in the hood area and does not spread throughout the room.

Fire suppression systems in the kitchens are inspected and cleaned by an outside contractor. Hoods and ducts are cleaned periodically. Filters are inspected and cleaned periodically by the food service contractor. Fusible links are replaced as required.

Standpipes

The purpose of a standpipe system is to provide hose connections inside the building, usually located in or near stairwells.

Use. Standpipe systems should only be used by professionally trained fire fighters because the pressure is difficult to control.
Inspections. Standpipes are inspected every year for water flow by an outside contractor.

Automatic Sprinkler Systems

Automatic sprinkler systems consist of a series of pipes and nozzles that distribute water when heat activates the individual sprinkler heads. Only the heads exposed to this heat will discharge. They are typically connected to the building fire alarm systems. Automatic sprinkler systems are extremely effective at preventing fire spread. In terms of life safety there have been no reported cases of multiple deaths occurring in fully sprinkled buildings where the system was operating properly. Sprinklers seldom fail to control fires.

Location. Automatic sprinkler systems are located in most of the buildings on campus.

Inspections. An outside contractor inspects all automatic sprinkler systems annually. Documentation is maintained in the Facilities Department.

Sprinkler Head Precautions. Storage shall be maintained at least 24 inches below any sprinkler head. Sprinkler heads must be kept clean and not painted. Do not cover or block

sprinkler heads. Sprinkler Piping shall not be used to support ladders, equipment, cords or other materials.

Fire Safety Inspections

Buildings. The State Fire marshal and the Environmental Health and Safety Office ensure compliance with applicable fire codes and conduct a comprehensive inspection of all University owned buildings annually. Reports are sent to affected departments for correction.

Fire Protection Equipment. All fire suppression and detection equipment is inspected annually by an outside contractor to ensure safe operation.

State Fire Marshal. Code compliance inspections are conducted for the entire Campus annually by the State Fire Marshal's Office. Fire Code Citation corrections shall be made in a timely manner and are overseen by the Director of Environmental Health and Safety.

Building Plans. Building plans for new and renovated campus construction projects are reviewed by the Department of Insurance-State Fire Marshal's Office for compliance with life safety codes and applicable fire safety standards prior to the construction.

Fire Hazards In Academic & Residential Buildings

Fires on college campuses are especially dangerous because of the population density. Students are concentrated in classrooms, places of assembly, and residence halls. When a fire starts, it can affect a large population at one time. Another issue complicating the fire problem on campuses is the nature of the buildings. Buildings housing classrooms and residences can be old, unprotected with open stairwells, and have limited fire extinguishing systems.

The following procedures are designed to reduce the potential for fires in academic and residential buildings by controlling combustible materials, reducing ignition sources, and ensuring that means of egress are properly maintained.

Prohibited Items

1. Firearm ammunition and explosives (including firecrackers) are not permitted in university buildings.
2. Motorized vehicles (motorbikes, mopeds, or motorcycles) may not be stored or parked inside buildings under any circumstances.
3. Flammable or combustible liquids such as gasoline, kerosene, charcoal lighter, turpentine, or similar substance may not be stored in any university housing unit. Gasoline is not allowed in any university building.
4. Avoid storing excessive amounts of paper or combustible materials.
5. Open or enclosed flame devices including kerosene lamps, stoves, candles, aromatherapy devices, or similar items are not permitted in School buildings

except for performances and other similar events with a burning permit issued by Environmental Health and Safety Office. (Appendix A)

Safe Appliance Use

1. In the residence halls, generally several student rooms are wired into the same circuit. To prevent overheating of circuits and possible fires do not plug more than two appliances into an electrical outlet.
2. Extension cords are for temporary service only (less than 90 days) and cannot be used in place of permanent hardwiring. Cords must not be routed unsafely (under carpet, through walls, etc.). Spliced, taped, frayed, or undersized cords must not be used. Unsafe extension cords may be disconnected and confiscated. Extension cords should be limited to use by maintenance personnel. Extension cords are not allowed in student residences.
3. Refrigerators are permitted in student rooms if they do not exceed a capacity of 4 cubic feet and use less than two amps.
4. Irons, coffee pots, small microwave ovens, popcorn poppers, and hotpots are permitted if constantly monitored.
5. Multiple plug adapters must be U.L. approved and have a built in circuit breaker that has a maximum load of 15 amps. Cube taps are not permissible.
6. Never leave an appliance unattended when it is plugged in and turned on.
7. Use the appliance only for its intended purpose.
8. Never use an appliance if it has a damaged cord or plug, is not working properly, or has been dropped or damaged.
9. Never block the air openings of an appliance.
10. Do not use an appliance where flammable liquid vapors, or aerosol products (hairspray) are being used.
11. Coffee pots should have an automatic shut off. Coffee pots should be near a door so they can be seen as people walk out of the door.
12. Dimmer switches and ceiling fixtures may not be installed.

Space Heaters

Refer to Appendix C: OSHR Portable Space Heater Use Program

Safe Holiday Decorations

For personal protection faculty, staff, and students are urged to use good judgment in decorating offices and classrooms so that furniture, posters, fish nets, mobiles, etc., do not create potential fire hazards. To prevent the possibility of fires everyone is asked to cooperate in enforcing the following safety standards for decorations and displays. Highly combustible materials include paper and cloth of all varieties, plastics, and all vegetation are not permitted. In order to reduce the potential for fires the following procedure should be adhered to:

1. All decorations using combustible materials shall be treated with a flame retardant solution. The label on commercial decorations will indicate if the item has been flame proofed.
2. Paper napkins, facial tissue, waxed paper, dried vegetation, wrapping paper, corrugated cardboard, asphalt, tar impregnated paper, and light plastics such as polyethylene film shall not be used inside residence halls because they cannot be effectively flame-proofed. No more than 50% of either side of the door may be decorated.
3. Paper or other materials must be kept at least 12 inches away from any incandescent or fluorescent bulb. Improvised paper shades for lights are not to be used. All electrical equipment (such as lights, wires, plugs, connectors, sockets, etc.) must be UL (Underwriter's Laboratory) approved and in good condition. The use of cube taps and improvised wiring is prohibited.
4. Open or enclosed flame devices (i.e., candles, kerosene or gasoline lanterns, torches, oil lamps, etc.) are not permitted anywhere on the campus except with a permit for use in productions and film shoots. (See Appendix A)
5. No decorations or displays shall be erected in a way that blocks or obstructs an exit, exit lights, fire suppression equipment, or fire detection equipment. Decorations are prohibited in a means of egress. Do not hang decorations from the ceiling.
6. To reduce fuel sources for fires, all materials should be promptly and properly disposed after the celebration is over or before leaving on holiday break.

Bonfires

A completed Open Flame Application must be submitted to the Director of Environmental Health and Safety Director at least 10 working days before any event that requires flame on School property. (See Appendix A) Appropriate fire extinguishers or hoses must be available. The bonfire should be limited in size to 5 ft X 5 ft X 5 ft and must be at least 200 feet from any structure. Larger bonfires may be acceptable if the Campus Police Office approves. The Winston-Salem Fire Department must be notified. Only seasoned dry fire wood may be used. The fire must be ignited by paper. Hydrocarbon fuels are prohibited. The fire must be put out before leaving event area.

Housekeeping

Good housekeeping practices can prevent fires, control the spread of fires in case of ignition, and avert injury during evacuation. The following describes several basic housekeeping requirements for all areas on campus:

1. Keep oily rags in a covered metal container and empty on a daily basis.
2. Remove litter from trash cans, hallways, stairways and floors on a daily basis.
3. Keep the accumulation of paper and flammables to a minimum and store away from heating devices.
4. Combustible materials should not be stored in attics.
5. Frequently remove excess dust or sawdust by use of broom or vacuum.

6. Provide sufficient ashtrays in outside smoking areas.
7. Ensure that flammable liquids are stored properly.
8. Keep hallways clear of storage and furniture
9. Do not store materials closer than 24 inches from a sprinkler head.
10. Never block or prop open an fire door..
11. Do not store materials in stairwells.
12. Never block fire extinguishers, sprinklers, and standpipe controls.
13. Always maintain 36” clearance in front of and beside of all electrical panels.
14. High Piled materials must be kept at least 24” from the ceiling to permit use of hose streams.
15. Do not allow smoking in "No Smoking Areas", Periodically check "No Smoking" areas for evidence of discarded smoking materials.
16. Make sure cigarette butts are cold before putting them in the trash.

Exit ways

The following procedures are designed to ensure that all hallways and exits are kept clear so that building occupants can get out quickly and safely and are based on NCBC State Fire Code, Chapter 10, Means of Egress

1. No obstructions of any kind shall be placed in front of or upon any fire escape, balcony, or other exit intended for egress from a fire.
2. No aisle, exit access, or stairway in a place of occupancy shall be obstructed with tables, show cases, filing cabinets, coat racks, or other obstructions to reduce its required width as an exit way during the hours the facility is open to employees and the public.
3. All exit doors shall be unlocked when the building or a portion of the building, served by the exit, is occupied. Exit doors shall swing with exit travel.
4. Storage of any kind, or use of office or laboratory equipment in hallways is not permitted.
5. Permanently attached lockers, bulletin boards, display cabinets, etc. may be permitted in some hallways, subject to the approval of the Environmental Health and Safety Office. Transparent covers on bulletin boards and display cabinets must be safety glass or non-splintering material.
6. Storage of materials on stairs, landings, or under stairs is strictly prohibited.
7. Fire doors separating stairwells from hallways, or smoke partition doors are to be equipped with self-closing mechanisms or automatic release hold-open devices and must be maintained in working order. They are never to be blocked, wedged or tied open.
8. Stairways, hallways, and other exit ways including the exterior open spaces to or through which exits lead, shall be kept adequately lighted at all times when the building is occupied.
9. Lighting shall provide at least 1.0 foot candles on walking surfaces.
10. The area immediately outside building exits shall be maintained free of material at all times.

11. Bicycles and gasoline operated vehicles are not permitted in hallways, stairwells, or on sidewalks immediately next to exits.
12. All exits shall be marked with a readily visible sign. Doors, passages, or stairs that could be mistaken for an exit must be marked with a sign stating "Not an Exit."
13. Emergency lighting must be provided for exit floor illumination in case of failure of normal lighting.

Electrical & Mechanical Equipment

Electrical defects, generally due to poor maintenance, mostly in wiring, motors, switches, lamps and hot elements are the number one cause of fires in industry. Fires in mechanical equipment are usually due to friction and contact with hot surfaces. Electrical and mechanical fires can be prevented by adhering to the following guidelines:

1. Use only UL, ETL or FM approved equipment.
2. Install and maintain electrical equipment according to the National Electric Code. Perform regular preventative maintenance on equipment.
3. Ensure that extension cords are UL listed, suitable for the application, and only used as a temporary measure.
4. Use proper size and type of fuses. Do not by-pass fuses or circuit breakers.
5. Ensure that terminal connections are clean and tight.
6. Use only approved equipment in hazardous locations where flammable vapors, liquids, gases, and combustible dust are present.
7. Do not store materials within 36” of an electrical panel.
8. Check your work area often for frayed wires and ensure that electrical equipment is working properly.
9. When an electrical malfunction occurs, tag the item “out of Service” and have it repaired as soon as possible.
10. Do not use temporary or makeshift wiring.
11. Properly lubricate machinery.
12. Properly adjust and/or align machinery.
13. Ensure that hot pipes are clear of combustible materials.
14. Provide 36” clearance around boilers, furnaces, and heaters.
15. Keep soldering irons off combustible surfaces.
16. Remove combustible dust and lint from bearings and shafting often.
17. Keep oil holes for bearings covered.
18. Ensure that penetrations through fire walls, floors, or ceilings are fire stopped with approved fire stopping material. See Appendix B.
19. Do not store combustible items in mechanical or electrical rooms.

Smoking

Carelessly discarded smoking materials are a major source of fires. Smoking is prohibited inside all UNCSA buildings and within 50 feet of public entrances. "No Smoking" areas should be conspicuously posted. Matches and smoking materials must be discarded in a safe container rather than on the floor.

Flammable Liquids

Flammable liquids are among the most common occupational hazards found in the work place. Flammable liquids can easily vaporize and form flammable and explosive mixtures in air. The degree of hazard is determined by the flash point of the liquid, the concentration of the air-fuel mixture, and the availability of ignition sources. In addition, many flammable chemicals react violently with oxidizing compounds and may start a fire. The flammability properties of a chemical should be checked before a flammable liquid is used. The danger of fire and explosions can be eliminated or reduced by strict handling, dispensing, and storage procedures.

Handling Flammable Liquids Safely

Ventilation. Ventilation is essential to prevent the buildup of vapors that could lead to fires and explosions. Vapors must be controlled by confinement, local exhaust, or general room ventilation.

Ignition sources. Flammable liquids should never be heated with an open flame. Containers should always be kept closed to reduce the possibility of flammable vapors contacting an ignition source. When flammable liquids are used, all unnecessary ignition sources should be removed. Ignition sources include open flames, non explosion proof electrical equipment, hot surfaces, and static sparks.

Smoking. Smoking is prohibited in areas where flammable liquids are used or stored.

Fire extinguishers. Appropriate fire extinguishers must be located in work areas using flammable liquids.

Warning signs. "No Smoking" and "Flammable Liquids" signs shall be prominently posted in areas where flammable liquids are used or stored.

General storage. Flammable liquids should not be stored near heat, ignition sources, powerful oxidizing agents, or other reactive chemicals. Flammable liquids should not be stored near an exit, stairway, or any area normally used for the safe egress of people. Storage in glass bottles should be avoided if possible. If glass must be used, the bottle should be protected against breakage. The quantity of flammable liquids should be limited to what is immediately needed. As much as possible of working quantities should be stored in safety cans. Flammable liquids should not be stored above eye level. Store solvent soaked rags in closed metal containers and empty daily.

Flammable Storage *Cabinets.* Quantities of flammable liquids greater than 10 gallons must be stored in flammable storage cabinets, approved safety cans, or a properly designed flammable storage room. Approved storage cabinets are designed to protect flammable liquids from involvement in an external fire for 10 minutes. All cabinets must comply with OSHA and NFPA requirements. Metal or wooden cabinets may be used if they comply with thickness and construction specifications. Maximum storage limits for

flammable liquids in approved storage cabinets are 120 gallons. Of this total, only 60 gallons of Class I and Class II liquids are allowed. No more than three such cabinets may be stored in a fire area. Storage cabinets are not required to be vented. Venting a cabinet may defeat the cabinet's purpose of protecting the contents from involvement in a fire for 10 minutes. Cabinets must be free of any fliers, paint or other markings and be clearly labeled in conspicuous lettering "Flammable-Keep Fire Away."

Safety Cans. Portable approved safety cans can be used to safely store, carry, and pour flammable and combustible liquids. The main purpose of the safety can is to prevent an explosion of the container when it is heated. Safety cans must be UL listed and FM approved, and properly labeled to identify contents. All approved cans must have a lid that is spring loaded to close automatically after filling or pouring. The lid also acts as a relief valve when pressure builds up in the can. A flame arrestor screen must be inside the cap spout to prevent fire flashback into the can.

Refrigerators. Flammable solvents must not be stored in standard refrigerators; Only explosion-safe or explosion-proof refrigerators may be used. These refrigerators should be posted as unsafe for storage of flammable liquids.

Container size. Flammable and combustible liquids must be stored in appropriate containers according to their classification. Containers of flammable and combustible liquids are limited to the following sizes:

Class	Glass or Plastic	Metal (non DOT)	Metal (DOT)	Safety Cans
Class IA	1 pt	1 gal	60 gal	2 gal
Class IB	1 qt	5 gal	60 gal	5 gal
Class IC	1 gal	5 gal	60 gal	5 gal
Class II	1 gal	5 gal	60 gal	5 gal
Class III	1 gal	5 gal	60 gal	5 gal

Inside storage rooms. Bulk quantities of flammable liquids, such as 30 or 55 gallon drums, must be stored in properly designed indoor storage rooms or outside storage areas. Indoor storage rooms containing flammable and combustible liquids must meet the requirements of OSHA Standard 1910-106(d). These standards include spill control measures, spark-proof electrical fixtures, fire suppression equipment, and ventilation requirements.

Electrical grounding. Transferring liquids from one metal container to another may produce static electricity sparks capable of igniting the flammable vapors. To discharge the static electricity, dispensing drums should be adequately grounded and bonded to the receiving container before pouring. Bonding between containers may be made by means of a conductive hose or by placing the nozzle of the dispensing container in contact with

the mouth of the receiving container. If the container cannot be grounded, then the liquid should be poured slowly to allow the charge time to disperse.

Spills. Appropriate spill kits should be available in work areas using flammable liquids. Materials should absorb the solvent and reduce the vapor pressure so that ignition is impossible.

Transportation. Flammable solvents should be transported in metal or other protective containers.

Compressed Gas and Flammable Gas Cylinders

Compressed gas cylinders are especially dangerous because they possess both mechanical and chemical hazards. Due to the large amount of potential energy resulting from compression of the cylinder, gas cylinders should be handled as high energy sources and as a potential explosive. In addition, the gases contained in the cylinders are hazardous because of flammable, toxic or corrosive properties.

The most common hazard associated with gas cylinders is leakage from regulators that can allow the gas to diffuse throughout the room. Flammable gases can mix with the air and present fire and explosion risks.

Identification. The contents of compressed gas cylinders must be clearly identified and bear the appropriate DOT hazard label. Labels should not be removed or defaced. If the labeling on a cylinder becomes defaced, the cylinder should be marked "contents unknown" and returned to the manufacturer.

Transportation. Manual transportation of cylinders should always be done with a hand truck. Cylinders should be securely fastened with a strap or rope. The valve cap must be in place. Cylinders should never be lifted by the valve cap or dragged, rolled, dropped, or permitted to strike hard objects or another cylinder.

Training. Persons who handle flammable gas cylinders should be adequately trained in the physical and chemical properties of the gas and the proper methods to use the cylinders.

Storage. Cylinders shall be stored upright where they are unlikely to be knocked over, or secured by a heavy chain, strap, or base support. Cylinders cannot be stored in stairwells or within a required exit corridor. The valve protection cap must always be in place when the cylinder is not being used. Cylinders should never be stored on their sides or near a heat or ignition source. Storage areas shall be posted with the name of the gases stored, well ventilated and dry. Storage rooms should be of fire resistive construction. Temperatures shall not exceed 130 degrees F. Containers shall not be stored near readily ignitable substances such as gasoline, waste, or bulk combustibles.

Flammable gas cylinders stored inside occupied buildings shall be separated from flammable liquids, highly combustible materials, and oxidizing cylinder by at least 20 ft. or a 5 ft. high wall with a 2-hour fire rating. Flammable gas cylinders in storage and in use should be kept away from arcing electrical equipment, open flames, or other sources of ignition. Adequate portable fire extinguishers shall be located in storage and use areas and "No Smoking" signs posted.

Outdoor storage. Cylinders may be stored outdoors if adequately protected from the weather and direct sunlight. It is recommended that cylinders be stored under a non-combustible canopy and protected from the ground by a concrete pad.

Welding & Cutting

Because cutting and welding equipment is portable, it brings fire hazards into areas not designated nor protected for fire hazards. Often the area near the operation has not been inspected for fuel load. Fires can be started with the generation of high temperatures from the torch and flying hot metal. All of this can be eliminated with a hot works permit system. The purpose of a hot works permit is to limit fire hazards by establishing safe working procedures. See Appendix D. After the work is finished, the permit is returned to the department that issued the permit. Do not cut, weld, or use other flame or spark producing equipment unless the following precautions have been taken with the exception of the Welding Classroom Area at Design and Production. However, hot work safety precautions 2 through 12 must be followed in the Welding Classroom Area at Design and Production.

1. A hot work permit has been completed and given to supervision.
2. An appropriate fire extinguisher is readily available.
3. Floor, walls, and ceiling are clear of flammable and combustible materials within 35 feet of the work area or the surface has been covered with a fire retardant cover.
4. Floor openings within 35 feet are tightly covered.
5. All equipment has been inspected and is in good working order.
6. The sprinkler system, where provide, is in service.
7. Procedures are being followed to ensure that smoke detectors will not be triggered.
8. The nearest manual pull station has been located.
9. A responsible fire watch has been assigned to watch for dangerous sparks in the area.
10. The fire watch will remain on the site for 30 minutes after completion.
11. For permit-required confined spaces, ensure that appropriate monitoring has been done before entry, mechanical ventilation has been provided, and rescue equipment is available.
12. Gas tanks are not to be taken into a confined space.

Fire Drills And Evacuations: See UNCSA Emergency Action Plan

Appendix A

UNIVERSITY OF NORTH CAROLINA
SCHOOL OF THE ARTS

Application must be made in writing (10) days prior to the open flame or burn activity

UNCSA CAMPUS OPEN FLAME/ BURN INSTRUCTIONS

Anyone who intends to use an open flame or pyrotechnics at any campus performance venue or on the University grounds will need to submit a completed and signed Open Flame/Burn Permission form to the Environmental Health and Safety Department for approval PRIOR to the performance. Approval is in accordance with the requirements of Winston-Salem Fire Department, NFPA Life Safety Regulations and is required by the North Carolina Department of Insurance before the ignition of any open flame on state owned property.

Campus Police reserves the right to order the extinguishment of any open flames that creates or adds to a Hazardous, unsafe or objectionable situation at any time.

The following activities are require to have an Open Flame/Burn Permit:

- Any indoor or outdoor performance activities or Art Work involving open flames and or candles
- BBQ activities, including gas or charcoal, Campfire, Bonfires, Vigils
- Providing heat for outdoor workers
- Recognized range or wildlife management practices or to control disease or pests

Location requirements:

- The location for any open flames 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.

Fire Safety Guidelines:

- Indoor flames produce air contaminants that can be sensed by the smoke detectors which may activate the building fire alarm system and dispatch the local fire department. UNCSA Campus Police MUST be notified by someone in charge of the production 15-30 minutes PRIOR the start of any production involving open flame.
- Use extreme caution to prevent the ignition of any nearby trees, foliage, grass, vehicles or equipment, or any other object adjacent, above, or below the area of the fire.
- Bonfires shall be limited to 5 feet by 5 feet by 5 feet in dimension and shall not burn longer than 3 hours. 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 flames 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:

- At least one portable fire extinguisher, 10lb ABC multi-purpose dry chemical or
- Two portable fire extinguishers, 5lb. ABC dry chemical or
- 2 1/2 gal. pressurized water extinguisher or
- Other approved fire extinguishing equipment, such as dirt, sand, water barrel, garden hose.

Appendix A, cont.

UNIVERSITY OF NORTH CAROLINA
SCHOOL OF THE ARTS

Application must be made in writing (10) days prior to the open flame or burn activity

CAMPUS OPEN FLAME/ BURN PERMISSION FORM

IN AN EMERGENCY CALL UNCSA CAMPUS POLICE: 336-770-3321

Date of Application: _____ Department:_____

Name of Performance/Activity: _____
Performance Venue or campus location:
_____

Person(s) in charge of production or activity:
_____

IMPORTANT! **Campus Police Must be notified 15 Minutes PRIOR the start of any production or activity involving open flame! 336-770-3321**

Email(s) and Phone(s) for Person(s) in charge of production/activity:
_____

Quantity, Size, Type and Burn Duration: example: 3 small wax candles burning for ten minutes or grill
_____

Date(s) and Time(s) of Performance(s) or Activities:
_____

Time of flame burn during the performances/activities (beginning, middle, end or throughout):
_____

Fire Suppression Available: examples: Water or sand buckets, Fire Extinguisher, garden hose
_____

Person(s) assigned to Fire Watch and/or knowledgeable in extinguishing excipient fires during burn time: _____
Department Dean or Designee Signature: _____ Date: _____

EHS Director or Facilities Management
Signature:_____ Date: _____

Appendix B

UNIVERSITY OF NORTH CAROLINA
SCHOOL OF THE ARTS

UNCSA Firestop Sealant Requirements for all Campus Facilities

The University recognizes that the most valuable asset in state government is employees and protecting employee safety and health is the greatest responsibility of state government. This includes the safety and well being of our employees, subcontractors, and customers, as well as the prevention of wasteful, inefficient operations, and damage to property and equipment. To this end, UNCSA has developed a policy that requires only non-flammable firestop materials to be used in University properties. People in the building industry believe these terms to be interchangeable, and or to be one and the same. However their use and purpose is very different.

Fireblock is a material whose main purpose is to slow air (oxygen) from feeding a fire in a building, and to resist free passage of flames or other products of combustion to other areas through concealed spaces. It is required by code to be used in concealed locations of combustible construction to prevent fire from quickly spreading through these spaces.

Firestop material is tested and approved for use in a specific construction detail that reflects the installed assembly, meant to protect rated penetrations by pipe, wire, etc.to the same degree as the fire-rated wall, ceiling or floor that is being penetrated. In combustible construction, fireblocking is installed to cut off concealed draft openings and forms an effective barrier between floors. Vertical concealed spaces without fireblocking act as a chimney, allowing smoke and flames to spread to adjacent walls and floor spaces. The proper design and installation of fire blocking ultimately helps slow the spread of fire, and thus provides more time for occupant egress.

For more detailed information and other references, see NCDOI OSFM White Paper; Fireblocking vs. Firestopping PDF.

Only the following (2) brands of Firestop Material shall be purchased by the UNCSA Facilities Maintenance Department and used by sub-contractors in accordance to manufacture specifications: 3M® FB 136 Fire Block Sealant or DAP® Fire Stop Fire-Rated Silicone Sealant. If necessary, any other departmental program at the University with a need for firestop should contact Facilities for assistance.

Appendix C

Office of State Human Resources Safety, Health and Workers' Compensation Division March 6, 2019 Space Heater Use Program

Safety, Health and Workers' Compensation Division
SPACE HEATER USE PROGRAM Effective Date: 10/08/14
Revised: 3/6/2019

PROGRAM: The Statewide Safety and Health Steering Committee created this document to address the unrestricted use of space heaters in facilities that house state workers.

RELATED LEGISLATION

Occupational Safety and Health Standards for General Industry: 29 CFR 1910.1000
Memorandums, Standard of Interpretation, Section III, Chapter 2, Subsection V of the OSHA Technical Manual.
North Carolina Fire Code: 2012 International Fire Code, Section 605.10 through 605.10.4. ; Section 1403.1 through 1403.6 and Section 603.4 through 603.4.2.3.4

I. PROGRAM STATEMENT

It is the desire of the North Carolina Office of State Human Resources that space heater use should be a last resort following Heating Ventilating and Air Conditioning (HVAC) personnel attempts to correct heating requirements in a state facility's heating system. Facility heating system modifications should be made where possible to avoid the use of space heaters. Portable space heaters are not intended for use as permanent heating appliances.

II. PURPOSE AND SCOPE

The purpose of this document is to provide safe guidelines for the use of supplemental heat when, work areas cannot maintain a 68°F to 76°F degree temperature threshold. Unfortunately, with the use of space heaters comes the increased risk of fire and potential injury. Therefore, it is necessary to establish and maintain strict guidelines for the use of such appliances. The scope of this program covers all N.C. State Government Agencies and UNC System Universities.

III. DEFINITIONS

Extension Cord: An electrical cord used to extend the length of a power cord.
HVAC: (heating, ventilation, and air conditioning) is the technology of indoor environmental comfort. HVAC system design is a sub discipline of mechanical engineering, based on the principles of thermodynamics, fluid mechanics, and heat transfer.
Multi-outlet strip: An AC power outlet with numerous receptacles.
Space Heater: An appliance that warms a small area, such as one room, typically by radiant electric or fuel-fired heat. (For the purpose of the *Space Heater Use Program*, this also includes items such as but not limited to electric blankets, pads, "foot warmers" and similar products that produce heat from an electrical or fuel source.)

Surge Protector: An appliance designed to protect electrical devices from voltage spikes. A surge protector attempts to limit the voltage supplied to an electric device by either blocking or by shorting to ground any unwanted voltages above a safe threshold.

UL Listing: Underwriters Laboratories provided safety-related certification, validation, testing, inspection, auditing, advising and training services to a wide range of clients, including manufacturers, retailers, policymakers, regulators, service companies, and consumers.

Group A: Assembly Occupancies: A building, structure or portion thereof, for the gathering of persons for purposes such as civic, social, or religious functions; food or drink consumption; or awaiting transportation.

Group E: Educational Occupancies: A building, structure or portion thereof, used by six or more persons at any one time for educational purposes through the 12th grade; and for educational, supervision or personal care services for more than five children older than 2.5 years of age.

Group F: Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H high-hazard or Group S storage occupancy

Group H: High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or *health hazard* in quantities in excess of those allowed in *controlled areas* complying with Section 2703.8.3, based on maximum allowable quantity limits for *control areas* set forth in tables 2703.1.1(1) and 2703.1.1(2).

Group I: Institutional Occupancies: A building or structure or portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age, are harbored for medical treatment of other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

Group M: Mercantile Group M occupancy includes, among others, the use of a building or structure or portion thereof, for the display and sale of merchandise and involves stocks of goods, wares or merchandise incidental to such purpose and accessible to the public.

Group R-1: Residential occupancies containing sleeping units where the occupants are primarily transient in nature.

Group R-2: Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature.

Group R-3: Residential occupancies where the occupants are primarily permanent in nature and are not classified as Groups R-1, R-2, R-4, or I, including: Adult care facilities for five or fewer persons for less than 24 hours. Child care facilities for eight or fewer persons, with no more than five preschool, for less than 24 hours.

Group R-4: Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities, or adult and child day care facilities that provide accommodations in a residence occupied as a home by the caregiver for persons of any age for less than 24 hours, including more than five but not more than sixteen occupants, excluding staff.

Group S: Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy.

IV. EMPLOYEE RESPONSIBILITY

1. When it is impossible to maintain a suitable working environment (68°F-76ºF), as documented by the HVAC personnel or other qualified person, a space heater can be utilized based on the requirements of this program. The employee seeking to use a space heater must initiate the space heater permit form (See Appendix B) and abide by the following guidelines.

2. For medical conditions requiring supplemental space heating in an otherwise suitable working environment (68°F-76ºF), proper medical documentation from a Licensed Practicing Physician and recommendation for supplemental heat is required prior to approval of space heater use. (See Appendix B)

3. The user of the space heater must follow all manufacturers' operating instructions and requirements.

4. Electrical circuits shall not be overloaded. Do not reset any tripped breakers. Overloaded circuits present a fire hazard. Call Facilities Services for tripped breaker resets.

5. The space heater must contain fully enclosed heating surfaces, be provided with a thermostat, tip over safety shut off, and be listed by an approved listing agency such as Underwriter Laboratories or other accredited listing agent.

6. The user must ensure the space heater is not plugged into an extension cord, multi-outlet strip, or surge protector. The space heater must plug directly into an *approved* 120 volt AC receptacle. Space heaters and their cords shall not be positioned so as to create a tripping hazard in the work area.

7. The employee will ensure that the space heater is turned off when unattended and at the close of business.

8. A minimum three feet area around, in front of, and above the space heater or an area greater as recommended by the manufacturer will be maintained around the space heater as clearance from combustibles. Space heaters shall not be used under desk or other furniture or equipment unless the aforementioned space requirements shall be met.

9. Portable electric space heaters shall not have worn or damaged electrical cords, and the plugs shall be in good condition.

10. Fuel fired space heaters shall be for Non-Office Use Only i.e. garages, warehouses, storage. (See Appendix A) DO NOT use indoors, unless properly ventilated per the Manufacturer's Recommendations/Requirements.

11. Fuel fired space heaters shall be free of any and all leaks.

V. EMPLOYER RESPONSIBILITY

1. Contact the facility HVAC Department to correct heating requirements by the central HVAC system.

2. Install weather stripping or control other sources of cold air and/or drafts.

3. Provide documentation that any and all corrective actions have been taken to maintain a suitable working environment (68°F-76ºF) in the affected work area.

4. Division Director or Designee (Designee must manage the local facility) will ensure this program is followed across the agency.

5. Program Evaluation will be conducted to assure compliance.

6. Space Heaters shall be inspected annually and the need for their continued use reevaluated.

VI. TRAINING: Employees shall review and comply with this program.

Appendix A
Section 605 Electrical Equipment, Wiring and Hazards, N.C. Fire Prevention Code, 2012 Edition

605.10 Portable, electric space heaters. Where not prohibited by other sections of this code, portable, electric space heaters shall be permitted to be used in all occupancies other than Group I-2 and in accordance with Sections 605.10.1 through 605.10.4.
Exception: The use of portable, electric space heaters in which the heating element cannot exceed a temperature of 212°F (100°C) shall be permitted in nonsleeping staff and employee areas in Group I-2 occupancies.
605.10.1 Listed and labeled. Only *listed* and *labeled* portable, electric space heaters shall be used.
605.10.2 Power supply. Portable, electric space heaters shall be plugged directly into an *approved* receptacle.
605.10.3 Extension cords. Portable, electric space heaters shall not be plugged into extension cords.
605.10.4 Prohibited areas. Portable, electric space heaters shall not be operated within 3 feet (914 mm) of any combustible materials. Portable, electric space heaters shall be operated only in locations for which they are *listed.*

Section 1403 Temporary Heating Equipment, N.C. Fire Prevention Code, 2012 Edition

1403.1 Listed. Temporary heating devices shall be *listed* and *labeled* in accordance with the *International Mechanical Code* or the *International Fuel Gas Code.*
Installation, maintenance and use of temporary heating devices shall be in accordance with the terms of the listing.
1403.2 Oil-fired heaters. Oil-fired heaters shall comply with Section 603.
1403.3 LP-gas heaters. Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with Chapter 38 and the *International Fuel Gas Code*.

1403.4 Refueling. Refueling operations for liquid-fueled equipment or appliances shall be conducted in accordance with Section 3405. The equipment or appliance shall be allowed to cool prior to refueling.
1403.5 Installation. Clearance to combustibles from temporary heating devices shall be maintained in accordance with the *labeled* equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with manufacturer's instructions.
1403.6 Supervision. The use of temporary heating devices shall be supervised and maintained only by competent personnel.

Section 603 Fuel-Fired Appliances, N.C. Fire Prevention Code, 2012 Edition

603.4 Portable unvented heaters. Portable unvented fuel-fired heating equipment shall be prohibited in occupancies in Groups A, E, R-1, R-2, R-3 and R-4.

Exceptions:

Listed and *approved* unvented fuel-fired heaters, including portable outdoor gas-fired heating appliances, in one- and two-family *dwellings*.

Portable outdoor gas-fired heating appliances shall be allowed in accordance with Section 603.4.2.

603.4.1 Prohibited locations. Unvented fuel-fired heating equipment shall not be located in, or obtain combustion air from, any of the following rooms or spaces: sleeping rooms, bathrooms, toilet rooms or storage closets.

603.4.2 Portable outdoor gas-fired heating appliances. Portable gas-fired heating appliances located outdoors shall be in accordance with Sections 603.4.2.1 through 603.4.2.3.4.

603.4.2.1 Location. Portable outdoor gas-fired heating appliances shall be located in accordance with Sections 603.4.2.1.1 through 603.4.2.1.4.

603.4.2.1.1 Prohibited locations. The storage or use of portable outdoor gas-fired heating appliances is prohibited in any of the following locations:

a. Inside of any occupancy when connected to the fuel gas container.
b. Inside of tents, canopies and membrane structures.
c. On exterior balconies.

Exception: As allowed in Section 6.17 of NFPA 58.

603.4.2.1.2 Clearance to buildings. Portable outdoor gas-fired heating appliances shall be located at least 5 feet (1524 mm) from buildings.

603.4.2.1.3 Clearance to combustible materials. Portable outdoor gas-fired heating appliances shall not be located beneath, or closer than 5 feet (1524 mm) to combustible decorations and combustible overhangs, awnings, sunshades or similar combustible attachments to buildings.

603.4.2.1.4 Proximity to exits. Portable outdoor gas-fired

603.4.2.2 Installation and operation. Portable outdoor gas-fired heating appliances shall be installed and operated in accordance with Sections 603.4.2.2.1 through 603.4.2.2.4.

603.4.2.2.1 Listing and approval. Only *listed* and *approved* portable outdoor gas-fired heating appliances utilizing a fuel gas container that is integral to the appliance shall be used.

603.4.2.2.2 Installation and maintenance. Portable outdoor gas-fired heating appliances shall be installed and maintained in accordance with the manufacturer's instructions.

603.4.2.2.3 Tip-over switch. Portable outdoor gas-fired heating appliances shall be equipped with a tilt or tip-over switch that automatically shuts off the flow of gas if the appliance is tilted more than 15 degrees (0.26 rad) from the vertical.
603.4.2.2.4 Guard against contact. The heating element or combustion chamber of portable outdoor gas-fired heating appliances shall be permanently guarded so as to prevent accidental contact by *persons* or material.
603.4.2.3 Gas containers. Fuel gas containers for portable outdoor gas-fired heating appliances shall comply with Sections 603.4.2.3.1 through 603.4.2.3.4.
603.4.2.3.1 Only *approved* DOT or ASME gas containers shall be used.
603.4.2.3.2 Replacement of fuel gas containers in portable outdoor gas-fired heating appliances shall not be conducted while the public is present.
603.4.2.3.3 The maximum individual capacity of gas containers used in connection with portable outdoor gas-fired heating appliances shall not exceed 20 pounds (9 kg).
603.4.2.3.4 Indoor storage prohibited. Gas containers shall not be stored inside of buildings except in accordance with Chapter 38.

Appendix B

Space Heater Use Permit and Annual Medical Authorization Form

Facility/Campus Name _____ Date: _____

Employee Name: _____

Employee E-Mail and Phone #: _____
_____

Office or Room Number _____

Appliance Type & Size & Model # _____

Applicant Signature_____

Supervisor Signature/Date _____

EHS Director Signature/Date _____

Facility Maintenance or Electrical Representative verifying circuits will handle the appliance and auto shut off device is operating:

Maintenance Representative Signature/Date: _____

Medical Authorization Section (For Medically Required uses, Annual Review Required) **This permit section is not valid unless it is fully completed and signed by a licensed healthcare provider.** I confer that the employee has a medical condition and requires additional heating. By signing this document, I conclude that the addition of heating is not a preference but due to a medical condition outside the control of the employee. The employee is responsible for purchasing the heating device and following the requirements of this program.

Practice, Address and Phone #:

_____

_____

Doctor's Name Printed: _____

Doctor Signature and Date: _____

Appendix D

UNIVERSITY OF NORTH CAROLINA
SCHOOL OF THE ARTS

HOT WORK PERMIT

Date of Application: _____ Department:_____

Type of Hot Work: _____ Date(s)/time(s) of Hot Work: _____

Person(s) performing Hot Work: _____
Person(s) assigned to Fire Watch (knowledgeable in extinguishing excipient fires) during Hot Work time: _____

Complete Pre-Hot Work Check List:

_____ Move all potential fire hazards at least 35 feet away from the Hot Work Area, including dust, sawdust or other combustible trash items on the floor.
_____ Guards in use to contain heat, sparks and slag.
_____ Cover/close any wall openings, doors and windows in the Hot Work Area
_____ Fire Extinguisher available for instant use.
_____ In areas where combustible materials could ignite and cause more than a small fire: Fire Watch during and 30 minutes after the Hot Work is complete.
_____ Welding/cutting not permitted in un-sprinklered buildings, in explosive atmospheres or in a area where storage is readily ignitable.
_____ Cutter/Welder is trained in safe operation of equipment and process.
_____ On-site contractors notified of Flammable or Hazardous conditions.
_____ Cutting containers:
  _____ Container clean and ventilated
  _____ Pipe lines/connections to containers disconnected/blanked
_____ Proper Protective Equipment to be used at all times
_____ Warning sign posted to warn others of hot metal if applicable
_____ Appropriate ventilation for the a Hot Work fumes is provided for the workers, excessive fumes will not carry into the HVAC system or activate the fire alarm
_____ If working in a permit required confined space, a permit-required confined space permit has been issued per OSHA CFR 29 1910.146.

For specific requirements refer to General Industry Standards 1910.146; 1910.252; .253; .254 and .272 and Construction Standards 1926.803; .350; .352 and .353.

Supervisor Signature: _____ Date: _____
Authorized Signature